MANUAL ON MANAGEMENT
OF
TEACHING, PROVINCIAL, BASE
AND
SPECIAL HOSPITALS

MINISTRY OF HEALTH, HIGHWAYS AND SOCIAL SERVICES

SRI LANKA .

1995

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LIST OF ABBREVIATIONS

ARV	Anti Rabies Vaccine
AO	Administration Officer
BHT	Bed Head Ticket
CNO	Chief Nursing Officer
CSSD	Central Sterile Supplies Department
CP	Central Pharmacy
CCS	Central Cleaning Services
CPR	Cardio Pulmonary Resuscitation
DMO	District Medical Officer
ENT	Ear Nose Throat
HHE	Hospital Health Education
HHEU	Hospital Health Education Unit
ICU	Intensive Care Unit
MLT	Medical Laboratary Technologst
MICU	Medical Intensive Care Unit
MO	Medical Officer
MS	Medical Superintendent
OPD	Out Patient's Department
PH	Provincial Hospital
PBU	Premature Baby Unit
PDHS	Provincial Director of Health Services
PMR	Post Mortem Report
PSC	Public Service Commission
PHI	Public Health Inspector
RDHS	Regional Director of Health Services
SICU	Surgical Intensive Care Unit
TCE	Tetra Chlor Ethylene

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CLINICAL SERVICES

02

CHAPTER 1

FUNCTIONS AND THE ROLE OF SECONDARY AND TERTIARY CARE INSTITUTIONS IN THE REFERRAL SYSTEM

1. INTRODUCTION

Even in a well graded system of health care where the primary, secondary and tertiary systems are well defined, in practice the boundaries separating the three areas overlap, more so in the areas of secondary care and tertiary care. Functionally secondary care institutions should deal with sickness and ill health which cannot be managed safely and effectively at the primary care level, and which therefore need a degree of expertise in the diagnosis, investigation, and management, not available at the primary care level, but not of sufficient degree of severity to warrant highly specialized care found at the tertiary level and at other specialized hospitals dealing with specific disease entities.

By convention in this country secondary care institutions are Base hospitals offering as a rule only the basic specialities of medicine, surgery, obstetrics and gynaecology, paediatrics and which have laboratory facilities sufficiently developed to fulfil their role as service organizations at that level. A few secondary care institutions may offer one or two sub-specialities such as Ophthalmology and Eye/ E.N.T. only as visiting consultations weekly.

Tertiary care hospitals are of three types - the provincial hospitals, the teaching hospitals and special hospitals. While the provincial hospitals deal with tertiary care, the teaching hospitals function in addition as University linked hospitals, engaged in the training and the turnout of high level medical manpower at undergraduate and postgraduate levels (the equivalent of the so called apical hospitals). They are engaged in organised research in clinical and allied fields, carried out by academic staff and non - "academic" clinical consultants. They, by their very nature of work, are engaged in enlarging the frontiers of knowledge, and such institutions are better equipped with levels of technology, and sophistication well beyond the scope and facilities in "non teaching" tertiary care institutions.

By convention in Sri Lanka teaching hospitals are defined as institutions affiliated to University Medical Schools, and engaged in the training and turnout of medical graduates. The fact that some tertiary care hospitals are also the centres of teaching, training and the turnout of nurses and other para-medical staff does not however qualify them perse to be labelled as Teaching Hospitals. Secondary care institutions while dealing with clinical training of interns are not engaged in the training of undergraduates or nurses or middle level technical staff.

While it is difficult to lay down across the broad functions of all the three levels under study in this chapter due to overlap, tertiary care institutions in the country, by convention and long practice, continue to function as primary, secondary and tertiary care institutions. This is not unrelated to, and is perpetuated by the absence of a precise definition of the scope and limitations and the nature of the work of the two areas. The consequent burden of work, results in the insidious lowering of the quality of care in order to accommodate all levels of health care within its confines. This, truly is a reflection of the non-implementation of a strict referral system in an otherwise theoretically well graded health care delivery system. With its socio-political overtones, the strict implementation of the referral system by the stroke of a pen, is impracticable, and would be socially unacceptable.

But a start has to be made somewhere or the spectre of over occupation in the centre and under utilization in the periphery will result in a health care system which will gradually alienate itself from grassroots level, and make the dream of appropriate health care for a large segment of the population at the appropriate levels, unattainable. This in turn would result in the quality of care at the centre to deteriorate.

2.0 THE OBJECTIVES OF SECONDARY & TERTIARY CARE INSTITUTIONS

2.1 General Objectives

Secondary and tertiary care institutions are links in the referral chain charged with the responsibility of making available to the public, at levels appropriate to the degree of development and sophistication of the institution, specialised medical and nursing care consistent with the needs of the public and also their expectations, and those of the Ministry of Health, the overall provider of such care. They should primarily aim at maintaining the continuity of care from the first point of entry in to the health services up to the highest available level of care, as the needs of the case may require. Secondary care could also be viewed as a link between primary care and tertiary care in the referral chain

2.2 Specific Objectives

1. To ensure that providers of health care offer to the public at the secondary and tertiary levels, the highest quality of care consistent with the degree of specialisation at such levels.

2. To enable those in charge of institutions to have specific goals and plan for the attainment of the required expertise defined for each such level.

3. To work towards the achievement of the plan for health for all by the year 2000 by improving and upgrading the quality of care at secondary and tertiary levels, within the framework of the overall health policy plan.

4. To facilitate application for specific budgetary allocations to ensure continuity of care and the quality of care expected at the two levels.

5. To educate the public directly and indirectly on the expected functions of each of the two levels in the referrel chain, and influence their thinking and expectations in consonance with the standards that should be expected at such levels.

6. To provide facilities and expert personnel for continued education of all grades of staff.

03. FUNCTIONS OF THE SECONDARY & TERTIARY CARE INSTITUTIONS

The hospitals' primary function is the care of the sick. However, the great and rapid strides in preventive and social medicine and its practical application to entire populations, the growing awareness of the thin line of distinction between health and disease, the important relationship between social and material environment and its effects on health and well being of populations, have resulted in a changed role of the hospital. Its function therefore is not only one of a restorative nature but also as a centre for a holistic approach to the problems connected with health. As such the function of a secondary and tertiary care hospital should be (1)

a) Restorative

1. Diagnostic - Outpatient, Inpatient Services

2. Therapeutic - Treatment & cure - complete with palliative, medical & surgical procedures

3. Rehabilitative - Restore normal or near normal health & functions.

4. Reactive - To sudden emergencies & accidents and disasters natural or man - made

b) Preventive

1. Control of communicable diseases by (a) notification and offering advice on the determinants and their control, by (b) specific immunizations like HBV, ARV etc.

2. Management of normal pregnancy and child birth, and supervision of the healthy development of the child.

3. Limiting prolonged illness and invalidism

4. Education in health preservation

5. Industrial and occupational health

c) **Educational** - Training of :

1. Undergraduate and postgraduate medical personnel, specialists etc. at Teaching hospital level.

2. Nurses and Midwives at Provincial, Teaching & Special hospitals.

3. Para -medical & M. L. TT staff at Provincial, Teaching & Special hospitals.

4. Training of Trainers at all levels.

d) **Research**

1. Clinical and Therapeutic control trials etc. at Teaching hospitals and Provincial hospitals.

2. Operational research in health services administration at all levels.

3. Evalution of health facilities & services, for optimal and maximal cost benefits/ cost efficiency.

4. Prediction of long - term trends in morbidity patterns and adaptation of services to meet the changes

4. STRUCTURE AND ORGANISATION OF SECONDARY & TERTIARY CARE INSTITUTIONS

(Vide table 1&2) pages 25 & 26

a) **Secondary Care Institution**

i. **Structure & Organisation**

In the past the largest among the D. H. H. functioned as secondary care institutions. All such institutions which were strategically well placed in the chain of health care institutions were upgraded to base hospitals. Base hospitals alone now constitute the second level of care, the D. H. H. forming the highest level of primary care.

Base hospitals - 27 in number - strategically located at the centre of the somewhat concentrically placed primary care feeder institutions have a combined bed strength of 7456. The average should be around 300 beds and range from 200 -400 beds. They should all have facilities for the practice of the basic specialities of Medicine, Surgery Obs., Gynae and Paediatrics, with perhaps visiting consultations in E. N. T. and Ophthalmology on a weekly or biweekly basis, and have laboratory facilities sufficiently developed to service the level of care relevant to the specialities offered.They do not undertake, nor have provision for, the training and turnout of nurses or M. L. TT grades. However the training of medical interns is an essential part of their function, and facilities should therefore be available for such needs. It should have sufficient beds set aside for the basic speciality units found in such hospitals. Since the bed strength in hospitals is fixed any change should be in consultation with, and with the knowledge of the Ministry of Health. Changes even in the interdisciplinary bed allocations should be with central authority.

ii) Administration & Staff

The Administrative head of a base hospital should be a senior D. M. O. engaged in purely administrative functions and not engaged in direct clinical duties, unlike the D. M. OO of D. HH. He should be involved with the day to day running of the institution, planning for it's growth and development and with improving the quality of care within the institutions. He should actively direct, and appear to direct , the functional organisation of the institution, its daily administration and establish a level of discipline in accordance with the expectations of the Ministry of Health. For this purpose he should have working directly under him at least one A. O. with multiple functions, who would handle accounts, payments, establishment matters, administration, personnel , stores and supplies etc. He should therefore have a minimum of 10-15 clerks working under his direct administrative control and that of the D. M. O. (the usual ratio is one A. O. to 20 clerks) and in charge of the different subjects under administration, establishment, stores, supplies, transport etc. Medical certificates, Medical Boards, diets, laundry, maintenance etc. are some such areas, of importance. A Matron functions as C. N. O. with at least 6-8 sisters and a staff nurse bed ratio of 1:5 . B. HH should therefore have between 60 - 80 nurses per institution and at least 20 more for every theatre in use.

One overseer for 60 labourers is the normal rule. 2-3 overseers with 100 labourers is about the requirement for base hospitals. Actual cadre provision for most categories is being worked out and what exists so far is on a "rule of thumb" basis.

iii) Ancillary facilities

X' ray and laboratory staff should be available to service the basic specialities with adequate provision for all staff by way of changing rooms, dining rooms, rest rooms. They should undertake only limited investigations for which facilities are available both for inpatients and for a limited outpatient service by way of outpatient investigations. Investigations of a very specialised nature should be referred to the nearest provincial or teaching hospitals through the relevant clinics, and dates and bookings obtained therein.

iv) Outpatients Department

This forms an essential facility at this level of care, and normally houses the general OPD, the admission centre, specialists clinics, and the treatment centre for outpatients. It is an important outreach of the institution for ambulatory patients, and its orderly and purposeful organization can perceptibly reduce the admissions to the hospital. The senior most MO/OPD should be in -charge of the roster and administration of the general OPD. The roster should be drawn up for each month and sent to the Head of the institution for approval. No arbitrary changes should be made in the roster without the approval of the Head of the institution or at least the Medical Officer in charge. The specialist clinics too are generally held at the Outpatients section and dates and times of the clinics should be drawn up and revised every now and then, to provide for changes of consultants etc. The list should be circulated to the feeder institutions. Special emphasis should be placed on an adequately provided, located and staffed pharmacy to meet the needs of General Outpatients Department and of the specialist clinics. A Sister in charge of the Outpatients nursing and minor grades would be a useful addition to the Outpatients department.

v) Management Committee

Management Committee with the D. M. O. as Chairman, or even a senior Consultant in some instances, should be encouraged as it broad bases the decision making process. Such committees for general management, on drug utilization, and the very important, housing sub committee with trade union representa-

tion , should help and guide the top level administrators of the hospitals. This encourages participation by all in the management process and ensures relative industrial peace in the institution.

(b) Tertiary Care Institution

i. Structure & Organisation (Vide table 1) page 25

Tertiary Care Institutions can be further subdivided into three groups, the provincial Hospitals, the Teaching Hospitals and the Special Hospitals. There are seven Provincial Hospitals with an average bed strength of 700 and a range between 600 and 800. The teaching hospitals are of two types : the general hospitals eight in number are multi-disciplinary, while three are single specialty hospitals.The general hospitals (teaching) have an average bed strength of 1100 and a range between 950-2500. The single specialty hospitals have an average of 350 beds with a range from 300-400.

The special hospitals though not falling into the group of teaching hospitals, deal with special disease entities mainly Psychiatry, Cancer, Leprosy, Tuberculosis and also Dental services. There are 17 such hospitals with an average bed strength of 250 and a range from 150-400. they undertake teaching of students as short term appointments, but not as a full-time undertaking. Tertiary Care Institutions form the more specialised hospitals in the Health Care Systems with increasing levels of complexity in terms of buildings and their physical layout, in the technical specialization and sophistication they offer, in the staffing, financing etc. as we pass from provincial through teaching hospitals to special hospitals. They all by and large, form the core of the tertiary care facility while the teaching hospitals and some of the special hospitals may be regarded as the sub apical referral hospitals, and the Colombo General Hospital the apical referral hospital, therefore the final referral hospital for all the tertiary care hospitals of the country including the other teaching hospitals, and some special hospitals.

In terms of buildings too the teaching hospitals with well defind areas, could be recognized , which are set aside for the basic specialities, the sub specialities, the investigation arms, and also for the administration and management functions. Quarters of a better quality with the ability to house a large variety of hospital staff should be available their availability improving as we move from provincial to teaching hospitals. Kandy and Colombo being the oldest, have a

distinct advantage in the availbility of quality facilities for medical and nursing care, for house keeping functions, in staffing and quarters for the various grades of personnel etc.

ii. Administration & Staff (vide table 11) para 2

The Administrative head of the provincial hospital is the Medical Superintendent, while in the teaching hospital a Director is in-charge. The latter is usually a more senior and an experienced administrator usually with post graduate qualifications in public health and /or administration.

In the provincial circuit, senior AO's with previous experience in administration at D. H. H. and Base Hospitals function as the senior administrative officer working directly under the M. S. He should be responsible for the implementation of all aspects of administration and the house keeping activities, and should coordinate all the management and the financial functions including stores, supplies, payments, cleaning, laundry services, building maintenance, food supplies etc. In the teaching hospitals, however a separate accountant/ or accountants should be in-charge of financial control, stores and supplies, salaries etc. while two or three administrative officers work directly under the Director of the hospital in the areas of administration, establishment, other payments etc. and such sub sections should be headed by senior clerks under whom several clerks function as subject clerks, each maintaining 250-300 files. There should be a well defined division of responsibilities with an appropriate level of delegation of powers and authority as we go up the scale for P.HH to T.HH and special hospitals. The responsibility however rests with the Director or the medical superintendent only. Therefore active awareness of and participation in all the administrative processes directly, or more often indirectly, should be the aim of a wise and prudent head of the institution.

ii. Nursing Administration

In both provincial and teaching hospitals a senior Matron should function as the C. N. O. with usually one Asst. Matron in the case of P. HH and several matrons in T.HH, to assist the C. N. O. in nursing administration. Clinical nursing and management of wards is directly done by the sister, or in-charge nurses, normally one per ward in P. HH and one sister, per ward in the T. HH. Staff Nurses in wards are in the ratio of one nurse to five beds. In Intensive Care Units,

the ratio should be normally one nurse per bed per shift plus 2 for offs etc. On an average estimate it works out to 5 nurses per bed, very much so if they are beds with ventilators and vital monitors. The two largest teaching hospitals have in addtion E.T. UU as part of the O.P.D. and this should deal with all immediate interventions and treatment at the point of entry viz, Cardiac arrests, asthmatics, poisoning, drowning , status asthmaticus and epilepticus etc. before transfer to the respective I. C. U. through the wards. These therefore should have specially trained nurses in adequate numbers for a continuous 24 hour daily service.

iii) Clinical areas - Inpatient Services

Each speciality should have a consultant as the clinical head of the unit/ ward with a team of medical officers ranging from senior registrar, registrars and interns in T. HH to S. H. OO and interns in P. HH. In all hospitals there are two interns per unit of the major specialities and 3 to 4 in the professional units, where there is added staff strength by way of Lecturers and senior lecturers engaged in clinical and academic work and reserch as well as teaching. Housing for residents and on call officers is an important facility which ensures prompt availability of residents 24 hours of the day and should form an important part in the planning and development of a hospital. A Housing Sub Committee should be an important adjunct to the hospital director's administration and with adequate T.UU representatation in such sub committees the directors would be relieved of a tremendously difficult and unpopular function.

The investigation arm is the most important facility servicing the specialities and sub specialities and is made up of the radiology department and the laboratory services respectively. These two together form the main stay on which the efficient and effective, functioning of the hospital clinical services depend. Unfortunately these are two areas which are not only constantly running into problems, in terms of staff, regularity of supplies, and equipment, but also constitute a major drain on the hospital resources. They all have senior consultants assisted by one, two, three or more consultants in the case of T. HH. Their facilities extend to both the inpatient and outpatient departments and therefore undertake a tremendous work - load in all hospitals both P. HH & T. HH. Annual review and upgrading of facilities in radiology and laboratory services should be an important function of the head of the institution working in close liaison with the unit heads. With the M. R. I. opting out as a supplier of chemicals and reagents, the M. S. D. finds itself ill-equipped and inexperienced in handling what

has been the preserve of the M. R. I. for over half a century . This, therefore, casts an additional burden of responsibility on the head of the institution where, reagent packs are bought under a local purchase scheme. He should exercise strict surveillance on such purchases. The M. S. D. should take over this responsibility to ease the burden of responsibility from the head of the institution.

iv. Clinical areas - Outpatient services

In both P.HH & T. HH. the outpatient department services constitute an important function of the hospital. It functions as the G/OPD, the admission centre, and the centre for followup specialist clinics, and together service a large clientele, ranging anywhere between 1500-2000/day in P. HH. and about 3500-4000 per day in T. HH. It is often termed the window to the hospital. Basically this area functions as the meeting place for primary, secondary, tertiary care clients, many of whom would have bypassed the primary and secondary care institutes at the lower levels. It should have a M. O. I. C. a Sister and nursing officers and senior clerk/clerks.

v. Clinical areas - Sub specialities

In the tertiary care institutions we meet with more and more finer sub - specialities and super specilities as we go up the scale from provincial to T. HH. Provincial hospitals and T. HH. all should have the standard sub - specialities of E. N. T. Ophthalmology, Orthopaedics, Rheumatology and Rehabilitation. Anesthesiology is well established and reasonably well staffed with consultant staff. In all units S. H. OO or/Senior registrars operate. In the teaching hospitals of Colombo/ Kandy / Peradeniya and Karapitiya, PGIM trainees reinforce the service sector whilst working as postgraduates under traning on rotation through prescribed subspecialities. The two larger teaching hospitals of Colombo and Kandy have other super specialities in addition, viz Cardiology, Neurology, Neurosurgery, Cardio thoracic surgery and also Oncology on a clinic visit basis. These function optimally at T. H. Colombo which acts as the apical referrral centre to the rest of T. HH. including Kandy. Only, Teaching Hospital Colombo has a separate well established and very well equipped Accident & Trauma centre, although a few other hospitals have such centres in a rudimentary state of development. They all transfer cases to Colombo for specialised intervention whenever necessary, normally by prior arrangement with Colombo.

vi. Clinical Services - Critical Care

Many tertiary care hospitals have critical care units though in the P. HH, they are still in a very rudimentary stage of development. They should aim at providing such care as a planned and coordinated service adequately staffed and with a minimum of equipment for monitoring. The bed requirement for I. C. UU. is worked out on the formula set out below.(Vide page 28 - appendix 4) Nursing skills are most important in such units and training of staff for a period of six months in an established and experienced unit is an absolute necessity. Training of staff in such areas as in blood gas analyses, electrolyte analyses, setting up of monitors, the care of the ventilated patient and the other specialised intervention strategies met with in C.C.U.U., S.I.C.UU., R.UU, M.I.C.UU, D.UU, N.I.C.UU, and N.S.I.C.UU are basics in the larger Teaching Hospitals. It should be the aim of Directors of Teaching Hospitals to gradually establish such areas of critical care, in a well planned, organised and systematic manner, to know the working & problems of such areas and be fairly confident and competent in discussing the organization by reading round the subject. The request for the establishment of special respiratory care centres though much lobbied for, should be viewed with caution in a health set up where the referral system is not well established and adhered to as, unplanned referrals to I.C.UU in the bigger hospitals is the order of the day, throwing out of gear the relatively well organised and efficiently run I. C. UU in such hospitals. Curiously this situation is met with more during week-ends and on the eve of public holidays. A respiratory care centre would attract too many referrals of even simple respiratory management cases from the periphery.

CENTRAL SUPPLIES

The central supply services originated in hospitals due to three main reason (a) the need to standardise the varying and sometimes conflicting demands from the various specialised clinical departments. (b) to reduce the cost of such operations by centralising the services and thereby standardising training methods, equipment and techniques, associated with a central supply system (c) as a spin off of centralised administration within the hospital with a view to coordinating the ever increasing specialization of hospital activities.

In its broadest sense central supplies system within a hospital could cover-

a) Central sterile supplies department
b) Central Laundry
c) Central Stores
d) Central Pharmacy

e) Central Kitchen (food supply)

f) Central surface cleaning services

When one thinks of central supplies all the above areas could be regarded as constituting central supplies of which the C. S. S. D. takes pride of place. All hospitals from Base to Teaching and the special hospitals should have all or some of these areas developed but to varying degrees of specialization .

They all have common objectives, techniques, methods and some of the equipment, as basic requirements for the establishment of such services. Sophistication in methods, techniques, requirements and therefore of the equipment, increases as we go up the scale from base to apical hospitals. It is only a few teaching hospitals and special hospitals that have central cleaning services.All these areas should be supervised by experienced professionals/ T.OO of that field, with a trained staff working under them. In the case of a C. S. S. D. an experienced and a senior nurse should be the leader of the team as it deals with medical and surgical supplies in use, their collection, cleaning, packeting and reprocessing in a form ready for reuse. It services material form all the clinical departments for cleaning and sterilisation, (and ensure their continued use). The single primary requirement of the C. S. S. D. is to ensure perfect sterility of equipment, dressing, and material cycled through it by various clinical and laboratory departments.

(a) Central Sterile Supplies Department

Almost all C. S. S. D. even those in a rudimentary stage of development should have an area set aside for receipt of used material, and an area for the issue of sterilised material ready for use. It should aim at pooled supplies, where on receipt of a certain number of used items an equal number of sterilized items are issued. What really obtains in most institutions is the receipt and issue to a particular clinical department its own items cleaned and sterilised, and not issues from a centralised unit divisive. The aim should be a pooled supply; but for this a larger stock of the various items should be available at the C. S. S. D. over and above the total of the separate clinical inventories in the institution. A protocol for the working of the CSSD should be drawn up and the cycle of receipt and issues carried out under strict surveillance; the surveillance extending up to the point of use of the sterilised material. The exact-work out of the protocol is beyond the scope of this article but should be in accordance with internationally accepted and laid down procedures. Packeting though expensive is the accepted method for theatre instruments and requires a reservoir of items in surgical theatres.

(b) The Central Laundry System

This operates only in a few hospitals but its working should be closely allied to the working of the CSSD except that asepsis is not enforced in laundering. Some hospital items are sent from that laundry to the CSSD when strict asepsis is required. viz. theatre linen. The hand washing by "laundry man" is still very much in use in even the larger provincial hospitals, where linen is washed, pressed and supplied on a piece basis on a contract system . Infective materials are disinfected and then washed separately. Central laundering is reliable, effective, efficient but expensive. It should be the ultimate aim in all teaching hospitals and special hospitals to set up a central laundry system because of its efficiency and the quality of its output.

(c) Central Stores

These should be available at all levels and should be directly under the Administrative Officer with a senior stores clerk or store keeper in-charge. Consumables, hardware, furniture, linen, uniforms, utensils, cutlery and crockery are some of the items handled by this section. Here too rules of purchase and issue should be strictly followed as laid down by the department and master inventories maintained of all non consumable items. This is a favorite area of inspection by audits and should therefore be closely supervised to prevent shortages, pilferage and substitution.

(d) Central Pharmacy

In smaller hospitals there is one central pharmacy for out and in patients whereas in the provincial hospitals and teaching hospitals separate C. P. and / stores exist for the OPD and one for inpatients. They should be in the charge of the senior most pharmacists who should be responsible for issues, receipts, checking and certification of receipts of drugs, dressings, surgical equipment, preparation of annual estimates and should also function as a team member of the consultant committee in the preparation of hospital requirements and preparation of the estimate books. He should be specifically allocated this responsibility in addition to other functions as local purchases of drugs, test checks of subsections under his/her charge on a regular basis, to prevent shortages and frauds. It should be his/her responsibility for the safe and proper storage of drugs, anticipation of expiry dates and action pursued for early disposal , maintenance of drug books and registers and regular balancing of such books. He should also be in-charge of the roster of pharmacists both indoor and the outpatients respectively.

(e) Central Kitchen

This operates in all hospitals by the direct provision of cooked meals by the hospital and supply of raw provisions to the kitchen through contractors. Kitchen supervisors, and dietitians operate in the bigger hospital food supply service. Sampling of food supplied to the patients should be done regularly by the Head of the institution and an inspection book should be maintained. The supply of diets to patients, extras, special diets, supplements etc. are well defined and these should be followed by the kitchen staff. An A.O. should be in overall charge in the larger hospitals, and be responsible to the head of the institution. All supplements have to be approved by the Head of the institution. Contract for supply of dry provisions should be by annual tender system as the Marketing Department has withdrawn from this activity.

(f) Central Cleaning Services (House Keeping Services)

This is one area which has not kept pace with modern advances in house keeping in the hospital system.

In most hospitals cleaning of wards, floors, toilets, drains and public areas is done by untrained hospital labourers under the supervision of the overseers and an A. O. There has however been in the larger hospitals, more recently a gradual introduction of C. C. S. through private contract. This system is more beneficial when introduced for the upkeep of new buildings. Little benefit could be expected and seen from such schemes in old buildings. It has however been worked out that C.C.S. on contract is cheaper in the long run and more efficient and the results clearly visible. There should however be strict supervision whatever the system in use in the hospital. The A.O.and the head of the institution should carry out inspections, both by day and by night of the premises, the wards, toilets and public areas on a regular basis interspersed with surprise inspections at least thrice a week.

6.0 ROLE OF HOSPITALS IN EDUCATION AND RESEARCH

6.1. A Global View

The axiom that a profession will be practised no better than it is taught is never more true than in the practice of medicine in all its diverse aspects. From the era of apprenticeship as the main mode of training under the preceptorial system in which the trainer worked under the tutelage of an established physician, to the stage of a truly graded curriculum build-up and its development, to the breaking up into components of preclinical and clinical training, education in health sciences has undergone rapid and revolutionary development. This rapid expansion though not as pronounced in the basic medical sciences has been phenomenal in the clinical and para-clinical fields.

The importance of strengthening the pre-clinical and clinical components of training and the rigid apprenticeship, followed by regular inservice training, reinforced by regular clinical conferences, mortality conferences,grand rounds and medical audit, all are consistent with the modern approach to strengthening the health services. More than even physical structures, reinforcing of the acquired skills and practices and refinement of the conceptual perceptions and precepts are most important in improving not only the skills of the staff but also the quality of work in the institute, and the esteem with which the public holds the institution.

6.2 Country Position

While basic education in the health sciences in Sri Lanka has been well established for medical and nursing students with successive intakes and passing out of batches, well planned courses of study, regular examinations and continuous assessment, it is not the case in many of the other fields in the health sciences. The resultant shortage of staff from M.L.T. Grades to trained attendants and labourers seems to be a perennial problem. Sporadic intakes, un-coordinated and irregular training programmes, have caused a crisis in adequacy of the technical and minor grades of the hospitals. Projection of manpower needs of the middle level and minor staff grades should run parallel to the development and growth of health care institutions and should be anticipated and provided for.

The role of secondary and tertiary care institutions under these circumstances, takes on an added meaning. The concentration of all these programmes

in one institute or perhaps two is possibly the cause of the shortage.This is particularly true in the training of M.L.T. staff, with the concentration of all programmes in General Hospital Colombo. While advances and refinements and teaching methods, have undergone diverse, improvements and revolutionary changes, the hospitals with their concentration of experienced professionals in "medicine" and "nursing" - terms used in their broadest sense- together with the Faculties of Medicine of the Universities with their selected body of clinical specialists working in hospitals, are known for their skills in teaching and research as well. They constitute a large body of men and women ably suited to guide the professional future of medical, nursing and technical students in the field of health care and research. and to contribute to the growth and development of the respective fields. The hospitals therefore constitute a large reservoir of skilled teachers and trainers and researchers of experience with advanced facilities and teaching aids, to impart knowledge to a rapidly expanding student body in all the fields of the health sciences.

The whole hospital constitutes a teaching area rich in teaching material and potential. The education of medical and nursing students has a history of rapid evolution to their present level of development and need no further elaboration.What remains to be done is to probe how best to improve the teaching facilities and accommodation to meet the challenge of increasing numbers staking their future in the health industry, and see how best curriculum development could keep pace with the rapid advances in almost all fields of the health sciences.

Various grades of medical, nursing and para medical manpower training are undertaken. The base hospital should undertake the training of the highest level of community health workers along with the D. H. H. Some of the provincial hospitals and the teaching hospitals have the staff but should be provided with facilites to train M. L. TT.

Resource personnel are available and such institutions should be upgraded as resources centres for continuing education of such categories of staff. The Colombo General Hospital has schools for training of, radiographers, ECG Technicians, Physiotherapists, M.L.TT & Pharmacists. It is important at least two other institutes Kandy and Galle should develop these training programmes, as the shortages of staff in all these categories are acutely felt in all the hospitals central and peripheral . The problem is further compounded by the long duration of some training programmes. National Institute of Health Sciences Kalutara

should be further developed in this respect to include training M. L. TT. (middle level technical grades).

6.3 Role of Medical Administrator in Medical Education

Good hospitals have always taken an active and important part in Medical Education although quantitive and qualitative diversity continues to exist from country to country and within a country from institution to institution and in different medical schools. Thus there are hospitals operating as great centres of medical learning while at the same time we have hospitals from which medical education is excluded, while possessing all the potential in the form of resource personnel, but lacking only in facilities to fulfill this role.While all hospitals cannot aspire to be teaching hospitals they could be incorporated as satellites to the teaching hospitals. Certainly more hospitals could be involved in practical training of the health sciences to other grades of staff other than doctors and nurses. What then is the role of the hospitals administrator in medical education ? There are four major areas in which his knowledge and awareness should be developed.

(1) He should have a grasp of trends in medical education as currently conceived by academic medical teachers and university administrators. He should be aware of major issues but not an expert in such matters.

(2) Be aware of the facilities needed for training in health sciences in medical schools and hospitals.

(3) Be able to appreciate the value and the meaning of an educational environment.

(4) Reorientate and adapt the institution its staff and facilities to fulfill the activities and goals in medical educationa (Benjamin Wells - "Medical Edcation" Chap. 44 modern Concepts of Hospital Administration" Owen and Eisleben. (with apologies for modifications to suit local situations)

6.4 What Needs to be Done

Incorporated in the hospital objectives in all secondary and tertiary care hospitals should be a teaching component as one of its important functions. It is only by introducing this component to institutions will they be sufficiently en-

couraged and motivated to undertake actively, teaching as part of the normal function of all hospitals. They should undertake not only inservice training of all grades of staff but undertake training of fresh intakes in selected fields and within its competence.

7. ROLE OF SECONDARY & TERTIARY CARE INSTITUTIONS IN THE REFERRAL CHAIN

7 (a) Factors affecting the referral system

The distribution of medical care institutions is so advantageously placed in this country, that a well coordinated referral system should theoretically be easy to operate. The factor militating against such an implementation is mainly the result of tertiary care hospitals gaining ascendancy in the public esteem by offering all three levels of care. The public in their turn, having experienced the delays in referrals from the periphery to the centre, would preferentially patronize institutions where such referrals could be within the institution itself. In practice this is what obtains . This has resulted in the weaning away of patients from appropriate levels of care and a concentration of a mixture of patients in the centre, both "appropriate" and "inappropriate". A change in this practice is desirable if health planning is to have meaningful results and the network of health care institutions appropriately and adequately patronized. One other equally important factor is the lack of precise definition of work that should be undertaken at Tertiary care level and at apical levels from that at secondary and primary care level. It is easy to identify referrals needing tertiary care. However, it becomes more diffuse at the level of secondary care while primary care can again be well defined and appropriately catered for.

7 (b) Referrals to Institutions

At present a system of forward referrals is in practice at all levels in the form of transfers from lesser specialised to more specialised institutions. It should be the responsibility of the transferring authority to ensure that transfers are for appropriate specialised care or for specialist opinion not available at a lower level rather than for the absence of consultants or lack of necessary supplies of essential items.

Back referrals are less satisfactorily established and the reasons are very often the absence of secretarial assistance both in the wards and at clinics, which are so heavily patronized that any extra work in the form of notes for back referrals throws an extra burden on consultants and staff. Hence the necessity for secretarial assistance. This assistance has been sought for by consultants at tertiary care level. It should be looked into and the administration should provide for adequate secretarial assistance, typing facilities, stationary etc. to ensure the practice of back referrals both at secondary and tertiary levels of care.

7 (c) Referrals to Clinics

Referrals are also made to specialist clinics from more peripheral institutions and these are customarily promptly referred back with the opinion sought . Here too secretarial assistance would enhance the build up of an efficient back referral system. This would also help to reduce the numbers transferred from peripheral to central institutions for "specialised" care when specialised opinion is freely and easily obtained from the centre. This applies in particular to the "super" specialities which are found only in a few hospitals.

7 (d) Referrals to I. C. UU

Referrals to I. C. UU from one institution to another should always be in consultation with the consultant in-charge of the I. C. U. in the "Transferred" hospital or the Director or M. S. of the hospital. The practice of transferring cases for ventilation or ICN management without ascertaining the availability of a bed would put the life of the patient transferred in jeopardy. It should be the responsibility of the consultants and the Head of the institution to ensure this requirement is adhered to without exception. Too often patients transferred for assisted ventilation have to be manually ventilated with oxygen and Ambu bag. This activity could as well be done in the local hospital without having to further risk the life of the patient by transfer on the "Ambu", only to continue manually assisted ventilation at the other end.

8. THE ROLE OF SECONDARY AND TERTIARY CARE INSTITUTIONS IN HEALTH SYSTEM RESEARCH

Secondary and Tertiary care institutions are involved in a very large number of complicated activities involving the use of men, material and methods, in such numbers & quantities as to incur heavy expenditure of resources and time. Several administrative practices have become so much a part of the normal working of health institutions that their effectiveness in the light of recent developments have not been probed or challenged. Health Systems research, or what was formerly known as administrative research activities in hospitals and other health fields, where the aim is to evolve newer methods and approaches based on factual and verifiable data obtained by well designed and planned studies and enquiry into such areas as facilities, staffing, services etc. The specific objective is to minimize expenditure on time and of finances and maximise the return for resourcers utilised, and ensure a progressive evolution of the institutional care facility in the health services.

Secondary and Tertiary care institutions have a rich potential for research on such new approaches and refinements of existing hospital practices, that the intelligent and conscientious research oriented hospital administrator need not be frustrated any longer in the maintenance of unsatisfactory routines, but set out in the light of his frindings, to blaze new trails and enlarge the frontiers of knowledge in the areas of hospital and health administration.One could anticipate much wider grounds and opportunities for research than even in the clinical fields.

The use of critical path analyses in the running of outpatients departments, operating theatres, laboratories etc. are some of the existing areas coming within operational research.

The best way to encourage meaningful research is for the authorities to expeditiously implement the findings of such studies which they find beneficial to the running of institutions, and to discourage esoteric and meaningless research which is of no benefit to the institutions or to the health system, except to add to the list of publications of the researcher.

Research undertakings into the running of health services could further be encouraged by adequate funding, and a system of rewards-financial or promotional - for publications which have an impact on the advancement and development of health care institutions.

Much of health systems research requires no elaborate facilities but a purposeful and tenacious pursuit of facts and figures generally over long periods of time, and the results made statistically acceptable. The involvement of academic staff in such studies would be beneficial in the design and planning, and the statistical analysis of results, as they are heavily involved in research, and well versed in medical studies and methodology of such studies. The use to both the researcher and the students, saves on cost and manpower needed for such studies, with the additional benefit of the services of an intelligent research assistant who has some interest in the subject. Their role should be prominently acknowledged in the publication.

Appendix 1

Table 1

Secondary and Tertiary Care Hospitals
Number of Bed Strength

Type of Institution	No.	Average No. of Beds	Range
1) B. H. H.	22	300	200 - 400
2) P. H. H.	07	700	600 - 800
3) T. H. H. a) General Hospital (Teaching) (Multidiscipline)	08	1100	950 - 2500
b) Special Hospital (Teaching) (Single Discipline)	03	350	300 - 400
4) Special Hospitals (Single Speciality)	17	250	150 - 400

Table 2

Appendix 2

Administration Organization

SECONDARY & TERTIARY CARE INSTITUTION

Type of Institution	Administrative Head of Institution	General Administrative Assistants	Nursing Administration	Ward Administration & Clinical Nursing/ Theatres	Labour Administration
Base Hospital	District Medical Officer	Administrative Officer	Matron (Nursing Officer Special Grade)	Sister Nurse i/c	Administrative Officer & Overseer
P. H. H.	Medical Superintendent	Administrative Officer Chief Clerk	Matron (N. O. Sp. Gr) Asst. Matron	Sister Nurse i/c	Administrative Officer & Overseer
T. H. H.	Director	Accountant Administrative Officers Chief Clerk	Chief Nursing Officer & Matrons (N. O. Sp. Gr.)	Sister/ Nurse i/c Theatre Matron	Administrative Officer & Overseer
Special Hospitals	Director/ Superintendent	Accountant Administrative Officers Chief Clerk	Matron N. O. Sp. Gr.	Sister	Administrative Officer & Overseer

Appendix 3

Table 3

SPECIALITIES AND UNIT STRENGTH IN SECONDARY & TERTIARY CARE INSTITUTE

Speciality	Number of Units in -			
	Base Hospital	Provin-cial Hospital	General Hospital (Teaching)	Special Hospital (Teaching)
01. General Medicine	1	2	4-7	-
02. General Surgery	1	2	4-7	-
03. Obstetrics & Gynaecology	1	2	2-3	4-5
04. Paediatrics	1	1-2	2	6
05. Radiology	1	1-2	1-4	2
06. Anesthesiology	1	1-2	2-4	2
07. E. N. T.	0-1	1	1-3	-
08. Ophthalmology	0-1	1	1-2	5
09. Dental Surgery	1	1-2	2-3	-
10. Physical Medicine	-	1	1-2	-
11. Psychiatry	-	1	1-3	-
12. Dermatology	-	0-1	1-2	-
13. Neurology	-	-	1-2	-
14. Cardiology	-	-		
15. Neuro- surgery	-	-		
16. Cardio-thoracic Surgery	-	-	3	-
17. Genito Urinary Surgery	-	-	1-2	-
18. Plastic Surgery	-	-	1-2	
19. Oncology	-	Visiting	Visiting	4-6
20. Transplant Surgery	-	-	One	Units

Apendix 4

A General Formula, for calculating the number of beds required for a unit, is as follows :

A) Determine the number of patients discharged from the hospital in the previous years of such patients that required close care.

B) Multiply this number by average stay anticipated in the unit

C) Divide this product by 365 giving the daily bed requirement for ICU patients.

D) Multiply this Quotient by two. This latter step is essential because out of a high Percentage of patients admitted to the unit, the admission diagnosis is not always confirmed.

For example - if in the previous year 200 patients were discharged with the diagnosis of acute Myocardial infractions, the bed capacity for the proposed unit could be calculated in the following manner.

(200 x 5) / 365 = 2.7 x 2 = 5.4 beds

Thus, a 5-6 bed unit should be planned.

"The Manual of Nursing in the Surgical Intensive Care Unit"
General Hospital, Colombo -

Weeratunga R. D. M. S. - Nursing Officer
Surgical Intensive Care Unit
General Hospital, Colombo.

CHAPTER 2

MANAGEMENT OF OUTPATIENT DEPARTMENT

INTRODUCTION

O. P. D. in a Hospital is one of the most important sections, as more patients use its facilities, compared to inpatients.

The O. P. D. should not be considered as an agency separate from the hospital.

If this department is housed in a separate building away from the main body of the hospital there is no community feeling and no unity of effort. In order to function properly the outpatient department must take its place with other departments of the hospital in all considerations of hospital organization - policy, facilities, financing patient care, teaching and research.

The activities of the O. P. D. will influence those of all other departments of the hospital, and the activities of all other departments of the hospital, will produce an effect on those of the outpatient department. Physical integration of the department within the main structure of the hospital, correlated staffing at all levels and correlated policies will best accomplish this goal.

Location

The location of the O.P.D. should be whithin the main premises of the hospital and should be readily accessible to the public.

The department should also be adjacent to the emergency service and admitting office. It is economic in terms of space to arrange physical proximity of the emergency and O. P. D. so that during periods of anticipated non use the outpatient.department facilities can be used for emergencies. Outpatient department functions traditionally in the normal working hours of the day while emergency rooms are usually open for a 24 hour period and may be particularly busy during evening hours. Thus the outpatient department's space can be utilized for emergency medical care.

It is also efficient to have the O. P. D. close to the X' Ray laboratory, Pharmacy and Physical medicine departments.

A most important consideration in the physical arrangement is to allow free flow of patients in and out, preferably through one particular area. This is more important than the establishment of large waiting areas. The arrangement should discourage waiting, eating and social gatherings and should discourage entering the wards. A circular arrangement of halls or longitudinal arrangement with entrance at one end exit at the other serves this purpose.

FACILITIES

Information

At the entrance to the O. P. D. there should be a facility for providing information and directions. There should be a desk or counter and a courteous receptionst is needed for this task.

Diagnositc Facilities

Consideration should also be given to providing facilities for obtaining electro-cardiographs.

X'Ray

Outpatient department patients frequently require diagnositc X'Rays and such facilities should be available close to the O. P. D.

Laboratory

It is convenient for a laboratory for routine work to be established in the O.P.D. Urinalysis and complete blood count should be available. A technician should be available for receiving specimens. This relieves congestion within the area while the patient is waiting for a specimen to be obtained. The work of the laboratory should be arranged so that the results of investigation are given wiithout delay.

Pharmacy / Dispensary

A dispensing unit should be set up in the outpatient department for the purpose of dispensing and filing prescriptions. The O. P. D. dispensary is open for issuing drugs from 8.00 a.m. to 5.00 p.m. uninterrupted. Depending upon O.P.D. attendance there should be sufficient number of dispensing counters. A separate counter for hospital staff is appreciated.

The Pharmacist in-charge,other Pharmacists, Dispensers and Minor Staff attached to the dispensary, should ensure that the dispensary is kept clean and tidy.

Only the staff attached to the dispensary should be allowed inside.

Information regarding use of drugs (how and when) have to be clearly explained to the patient by the pharmacists at the time of issuing drugs. This will ensure correct use of medicine.

Dressing Room

The dressing room, should be under the supervison of a Nursing Officer. The services of two trained persons should be made available.

Injection Room

A separate room, equipped with facilities viz : sterilizers, trolley, syringes, emergency tray etc. to administer injections should be available. An adequate number of Nursing personnel should be available to work in the injection room.

Consultation / Rooms.

There should be adequate number of rooms or cubicles for MOO's to examine the patients.

BP apparatus, torch, clinical thermometer, tongue depressor etc.should be supplied.

Rubber stamps such as, "HO to see stat, "Wheel Chair", Inform police etc. should be provided to the medical officers.

Re-Hydration Room

A separate room with at least two beds and two cots; should be available as a Re-hydration room for diarrhoea patients, as 90% ofthe diarrhoea patients can be sent home after 4-6 hours of immediate treatment and advice.

Ticket Issuing Counter

The services of a minimum of two courteous persons for this task are necessary. This section should be provided with the following;

i) A long counter / desk (for issue of tickets and maintaining records)
ii) Cupboards and racks to store printed forms tickets etc.
iii) Rubber stamp with the name of the Institution
iv) Stamp, pad & ink.

- A numbering machine and ink.
- O. P. D. tickets B. H. TT. and check tickets.
- Two high stools.
- A bottle of gum
- A Register to maintain statistics of patients.
- (1st visits and subsequent visits)
- A wall clock.

Working Hours

O. P. D. should function from 8.00 a.m.to 4.00 p.m. except on Sundays and public holidays.

At other times it is open for admissions and emergencies only.

Admission Procedure

The admitting department should be located as close as posible to the patient's entrance and to the services he will utilize before being sent to ward. The medical evalution is an important function of admitting of patients who come to the hospital seeking admission without previous diagnosis by a physician. A house telephone will be necessary for communications with other departments.

Privacy is an important requirement in the admitting department. No one likes to divulge information of a personal and confidential nature, but to have to do so in a place where every word can be overheard is most undesirable.

Sufficient number of personnel should be deployed to transport patients by trolly, stretcher when necessary.

> Under no circumstances should patients be examined and admitted in duty rooms

ORGANISATION OF AN EMERGENCY TREATMENT UNIT, RESOURCES REQUIRED, MANAGEMENT OF THE UNIT, TYPES OF PATIENT TO BE MANAGED IN THE UNIT

In order to provide an efficient, prompt and quick service, it would be better to have a separate section in the outpatient department, under the supervision of V. P., O. P. D. to attend to emergencies. This service should be provided 24 hours of the day.

STAFFING

Medical Officers

4 Medical Officers, 1 M. O. for a shift.

These M. OO. should be given 2-3 month training in a Cardiology unit, MICU, and SICU, respectively. V. P., O.P.D. should supervise these medical officers.

Nursing Officers

3 Nurses per bed.

Adequate number of Labourers.

Equipment

Beds	-	2
Cardiac Monitors	-	2
Defebrillators	-	2
Nebulizers	-	2
E. C. G. Monitors	-	2
Infusion Pump	-	
Glucometer	-	

Piped Oxygen

BP Apparatus

Saline Stands

Medicine Trolley

Injection Trolley

Dressing Trolley

Resuscitation Set

I. V. Fluids

Emergency Tray

Necessary Drugs

The patients who are fit to go, may be sent home, after treatment. Those who need further treatment, should be sent to the respective wards. This system would reduce over crowding in a Hospital.

TYPE OF PATIENTS TO BE MANAGED IN THE UNIT

For Example

Section 1

Cardiovascular Emergencies

Eg : Acute myocardial infarction

Cardiac arrest

Cordiogenic shock

Hypertensive emergencies

Section 11

Respiratory Emergencies

eg : Respiratory Failure

Status Asthmaticus

Epistaxis

Section 111

Neurological Emergencies

eg : Unconscious Patient

Status Epilepticus

Stroke

Section IV

Endocrine and Metabolic Emergencies

eg : Diabetes Melitus

Hypoglycaemic Coma

Thyrotoxic Crisis

Section V

Acute Poisoning

eg : Poisoning, by agrochemicals

Poisoning by Corrosives

Ethyl Alcohol

Methyl Alcohol

Section VI

Snake bite

Section V11

Injuries due to Physical Agent

eg . Electric shock , Drowning

CLINICS IN SECONDARY / TERTIARY CARE INSTITUTIONS

Objective

To provide efficient and effective health service to patients who need specialized care.

Methodology

Appointments should be given for patients to see the consultant. Transport facilities should be provided for disabled.

Reception / Registration

A place must also be provided for the reception and registration of patients. The functions of information, reception and registration can be combined in one facility. Two desks or counters will be necessary. One for the registration of new patient and other for the issue of clinic cards for the old patients.

Each patient registered in a particular clinic should have a clinic record sheet in a particular colour.Once a patient is registerd the clinic registration number should be entered in a check ticket in similar colour and given to the patients with clear instructions that it should be brought at the next visit.

As soon as the patient is registered, he should be directd to his particular clinic. A clinic area should be served by a nurse or other personnel to receive the patient.

RECORDS

Registration of all patients whether inpatient or outpatient should preferably be controlled or under the supervision of the Medical Records department.

The first sheet of the record should be typewritten or otherwise printed and should contain the usual identifying information common to all hospital records.

A unit record system combining both the inpatient record and the continuous clinic record is helpful for review by the physician seeing the patient and lends emphasis to the concept of continuing patient care . The patient should not carry his own record. There should be efficient messenger service to allow the record to be sent from the record room or registration area to the clinic where the paient will be seen. The record should be handled by hospital personnel only.

There should be ample space for recording the medical data. It is helpful if the form sheet is used to record diagnosis, immunizations, drug idiosyncrases and other important data.

At each visit a note should be entered on the chart by the physician seeing the patient. The medical note should record the medical facts,, any treatment given in the O. P. D. the medication ordered for the patient to take home and the time and date of next visit . If a special diagnostic procedure is ordered eg. X'Ray this should be recorded.

Medical Screening

The clinic section is the ideal location for medical screening units. A microfilm room and screening laboratory can be located close to the point of registration so that new patients on their first visits and old patients at stated intervals can receive the advantages of screening for chronic diseases. Tuberculosis, other pulmonary conditions and cardiovascular diseases are revealed in the X-Ray film. A urine specimen may be examined for bile, albumin, sugar and blood. Physical measurements, such as height, weight temperature, pulse, respiration and blood pressure may also be noted in this unit.

Minor Operations Theatre

The type of minor operation to be done in the clinic should be determined and set down. This is particularly true for the surgical clinics. Drainage of abscesses, biopsy, removal of cyst and minor plastic procedures can ususally be done. Procedures requiring other than local anesthetic should not be done here.

Supporting Services

Supporting services such as laboratory X'ray, other diagnostic facilities, Dietetic or nutrition advisory services, pharmacy should be available close to the clinics.

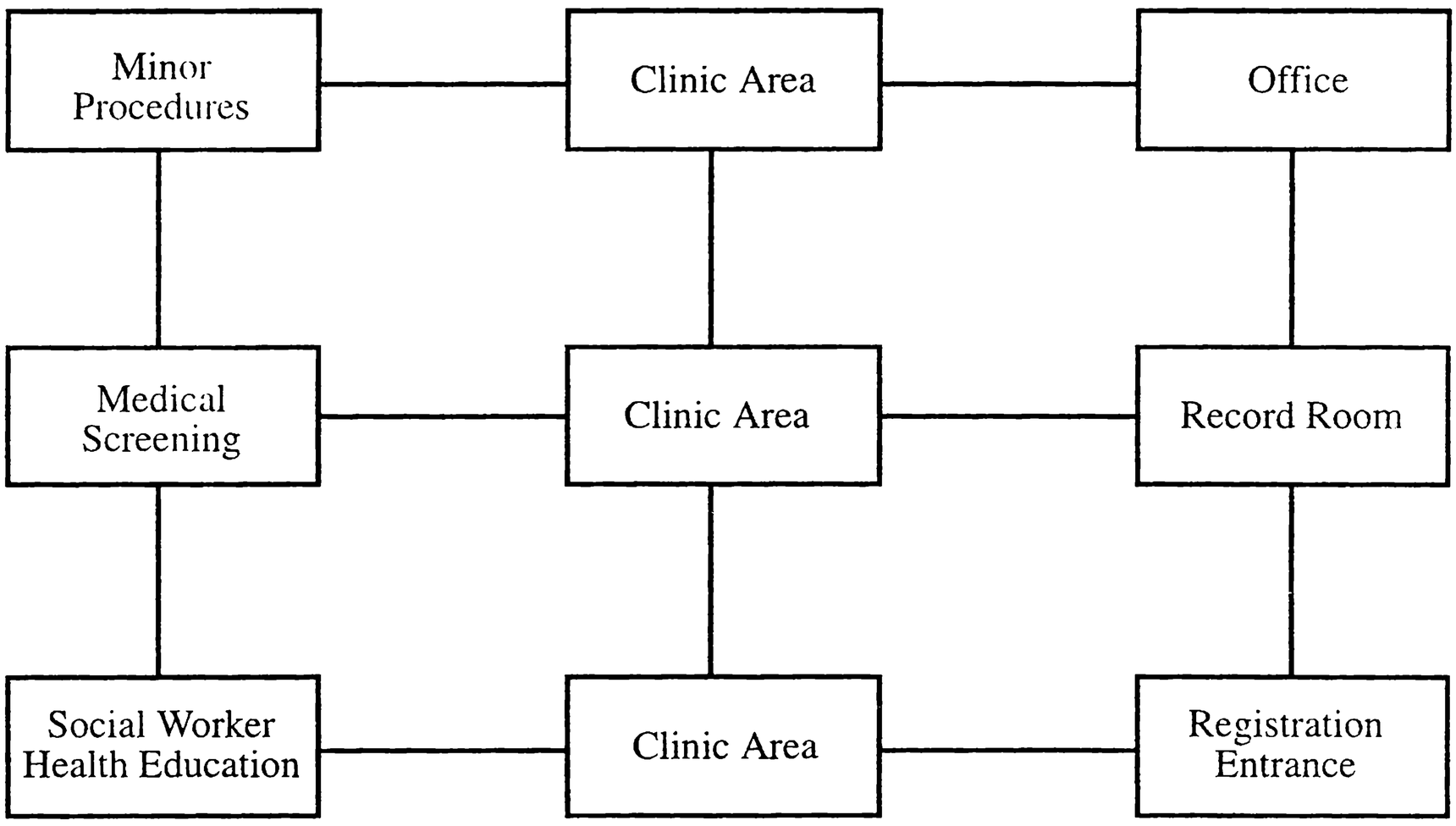
Social Services

Awareness of social factors is a part of modern medical care. To assist in the management of the clinic-patient a social worker or social service department is needed.

The social worker can determine the existence of significant social problems related to the patient's illness. The social worker can assist in guiding patients in complicated family situations. When hospitalisation is recommended to the patient. the social worker could follow up the progress.

People who are alone often require special help. Financial support, referral to social and welfare agencies in the community and job referrals are all matters that can be handled by qualified social workers.

BASIC LAYOUT OF CLINIC DEPARTMENT



ORGANISATION OF ACCIDENT SERVICE
IN A SECONDARY / TERTIARY CARE

INSTITUTION

Best designed on an open plan system with swift and easy access. Generously supplied with all its needs-Communication facilities, transport facilities and equipment . It should have the following.

1. Reception Area

Personnel - Admitting Officer (non Medical)

TRIAGE NURSE - To identify patient categories.

Eg . Shock following multiple injuries,

Trolley patient	-	Unable to walk but conscious,
Minor injuries	-	Lacerations, minor fractures
Other	-	Only require first aid/advise
Labourers	-	To move patients
EQUIPMENT	-	Trolleys, Wheel Chairs

2. Resuscitation Area

Resuscitation Area Separate area for treatment of emergencies.

Personal
Medical Officer,
Anaesthetist H. O.,
Nurses,
Minor Staff.

Equipment Anaesthetic machine with all accessories, Monitoring equipment
eg: ECG Monitor, Portable X'ray machine or easy access to X-ray plant.

3. M. O. O. / Nurses Station

Ideally both situated at the same site,, thus, allowing patients to be promptly seen by all M. O. O. and Nurses - no delay in communication between all staff.

4. Examination Rooms/ Cubicles

Area for M.O.O. to examine patients and treatment of accident victims.

Equipment - Examination bed ; B. P. apparatus, and other necessary equipment.

Personnel - One Nurse & Minor staff to assit M. O.

Other Equipment in the Accident Service

Annexure is attached

5. X-ray Department

Ideally there should be separate X-ray department attached to the Accident Service.

Personnel - Radiographer, Dark room assistants and minor staff.
Ideally X-ray department should have a sepearate reception unit which will minimise delays of radiography for urgent cases.

Equipment- Ceiling mounted tubes; orbix special skull work.
One portable unit
(for I. C. U. / Wards/ plaster room)

6. Plaster Room - Equipment

Plaster - All size 2" x 8"

Plaster Equipment - Cutters, Spreaders, Scissors

Plaster Table - Hip spica table

Personnel - Plaster Technician - specially trained plaster nurse, and minor staff.

Other Equipment in the Accident Service

1. Wheel chairs
2. Trolleys
3. Portable X'ray Unit
4. O_2 Cylinder
5. Drugs - pain Killer
6. Antibiotics
7. Tetanus toxoid
8. I. V. fluids
9. Splints
10. Cannulae
11. Bottles for blood analysis
12. Suture Materials
13. Sterile pre-packed packets for suture of wounds

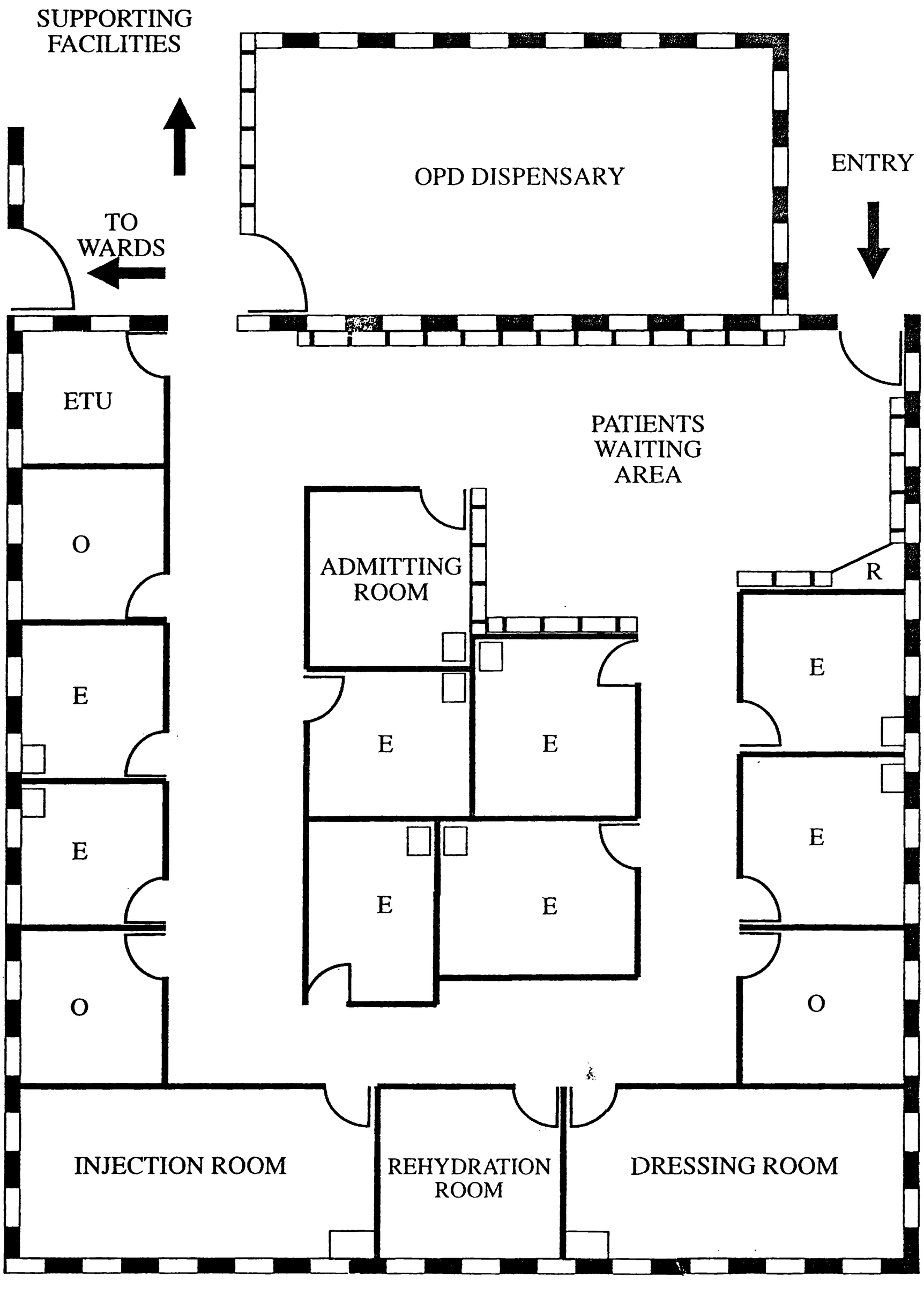
Reception Desk / Information Desk

Communication gap can cause lot of damage : consequently the image of the hospital can be affected unless information sought by the next of kin is correctly disseminated. They have a right to know the condition of patient. For this end the information desk method has proved very effective. As such the management has to identify the most sensitive and priority wards/ units and deploy suitable personnel to give the relevant information. Intensive care unit, accident service, maternity wards, children's wards and surgical wards can be considered as unit, where such public relations desk/counter may be maintained. A senior nursing personnel can be provided with a suitable chair and table in the unit. A notice board may be displayed. This involves no additional expense as the duty hours of the nursing personnel falls within the visiting hours when members of public visit patients. Courtesy and correct information solve a lot of unpresentable ill effects.

Sign Posts

Sign posts to guide patients to various facilities describing services, where necessary, should be prominently displayed. Arrow indicating directions to wards, clinics path-labs, Radiology department etc. may be exhibited at suitable places.

BASIC LAYOUT OF AN OUT PATIENTS DEPARTMENT



E - Examination Room O - Office

R - Reception ETU - Emergency Treatment Unit

CHAPTER 3

WARD MANAGEMENT

1. Introduction

Successful management of a ward is based on good assessment, organisation, implementation, evaluation and leadership which are its essential factors. As various groups of people are involved, good cooperation and coordination are needed . Major aim in nursing services is to provide quality care to the patient, family and community.

2. Objectives

a) Alleviate suffering socially, physically and mentally of a sick person and bring back to health, and where complete care is not possible, rehabilitation leading to good productivity.

b) Health education for prevention of disease and improve home care.

c) Maintain hight standards of discipline to provide health and pleasant environment.

d) Provide a field for teaching and research.

3.

Ward sister or the senior nurse who handles the ward inventory and who is responsible for the entire patient care of her unit/ward is the key leader in ward management. Her prime aim is to diagnose nursing needs, make plans to meet them and delegate authority with responsibility. Staff development is also one of her responsibilities.Ward management will be discussed under following three sub headings.

a) General principles of management which affect patient care;
b) Patient care management;
c) Staff development.

a) GENERAL PRINCIPAL OF MANAGEMENT WHICH AFFECT PATIENT CARE

There are many points of management which influence direct service to patients, the indirect activities which contribute to their welfare and that of personnal management as it affects patient care at unit level involving the following;

a) Identification of activities to be performed eg. medical, surgical, intensive care etc, activities differ.

b) Plan programme for the day.

c) Beginning the day on time.

d) Prevention of interruptions.

e) Well - organised routines and procedures

f) Clearly defined job descriptions.

g) Adequate equipment in working order, accessibility

h) Suitable environment.

i) Well organised time - work schedule.

j) Clear - cut doctors' orders

k) Explicit nursing orders and plans for patient care.

l) Reports and accurate records.

n) Good teaching plan, supervision and evalution.

Sister is the key person who maintains harmonious relationships with co-workers as the leader. She establishes the standards for nursing and maintains good relationships within the group and outside. She should be friendly, helpful and understanding. All workers should work without tension. Her team includes medical staff, nursing staff, minor staff and supportive staff. She should adhere to the departmental regulations and the orders of the head of the institution. She prepares a clean, safe comfortable unit with pleasant environment with adequate ventilation and light. She should be thoroughly familiar with all the activities which must be performed in the care of the patient. Those which occur regularly can be planned and fitted into her programme. Diets are served at a fairly definite time. Patients go to the operating room and return to the ward between certain hours. In general the doctors are in the ward at about the same time each day. Knowing the schedule the sister is able to plan the programme. She should be familiar with hospital and unit policies and patient care activities.

4. a) Planning the programme for the day

To prevent loss of time, each day's work should be planned in advance and proper assignments made. Staff members should be encouraged to read and plan their work for the next day before leaving the ward. The day then begins with each individual knowing what she is to do. Adjustments however may be made due to the changes that occurred over - night - such as admissions, discharges, new treatments etc. For this the sister in - charge has to come a few minutes before others. This gives time to note changes in plans, so minimizing delays. Night nurse must prepare a list of patients who are to leave the ward for various tests or treatments, operation, fasting patients, nasal feeds and those who need full sponge baths and patients awaiting discharge. Sister will attend to this and will inform staff. Day work should start after finishing the night work. If there is night work remaining the sister will divide them among the staff and see that these are finished before starting day work. Here, staff cooperation is essential and the sister has to balance the work for the day.

4.b) Beginning the day in time

Good management is greatly facilitated by starting the day's work promptly. Every nurse should be in the ward at the time assigned. The night nurse whether or not her work is completed, should be prepared to give the night report at the designated time.

4. c) Preventing

Since time is wasted in going from one activity to another, good management requires avoidance of interruptions. Whenever emergencies arise, (new patients may come) one nurse must be assigned to care for the new patients. The sister may be helped by a ward clerk who will answer telephone calls etc. She should finish one activity before starting another. She should make ward rounds with consultant, in her absence nurse may be sent. It is her responsibility to write reports, read progress notes, check medicine etc without interruption. she should be accessible and thoughtful of staff. A private office to be maintaind for planning time and assignments.

4. d) Routines and Procedures

Routines and specific procedures are essential for an efficiently run organisation. Patient - care management is no exception. When a system is developed for day to day tasks, time is saved for unusual occurrences. A definite system of giving over patients, specific systems for assigning new patients, a carefully worked out procedure for admitting patients, sending patients to operating theatre and taking over of patients from theatre, transferring patients from intensive care units, these daily activities are carried out regardless of emergencies which may arise. A systematised schedule will work whether or not the sister in - charge is present. Time is saved and accuracy will result if routines are laid out in detail and placed in a "Policy Book" Likewise a nursing procedure book to be kept in ward for referrence. A check list for those who are going for operation is time saving and perfect.

Check list (pre - and post - operation)

Sister's routines should tally with the established practices of the hospitals - i.e. visiting hours, meal hours, admission and discharging procedures, handling of valuables etc. Therefore she should follow the pattern of the hospital.

4. e) **Job descriptions**

Functions to be performed by the holder of the job, his obligations and person or persons to whom he is responsible should be clearly set down in a job description. The sister should be familiar with the job description of the staff. It must be clear that ward sister is responsible for the care of all the patients. She should be informed of a change in nursing method, of the condition, or giving a report, when students go off duty. It is not enough that students go off duty. It is not enough that students report to the instructor.

4. f) **Adequate Equipment**

Any job is made easier by having well constructed tools suited for the work to be done. Tools need to be easily accessible, clean and in working order. Sister is responsible for supplying the tools. Efficiency depends upon having enough of the right kind, at the right time, in the right place. Carefully thought out standards for supplies and equipment are necessary in ordering. When supply is low, it should be reported. When out of order, it has to be repaired as soon as possible.

4. g) **A suitable environment**

Rest is very important to a patient to return to health. A quiet atmosphere and fresh air be provided. Privacy has to be looked into - provide pleasing colours, comfort and personnel adds to the efficiency and morale. Cleanliness and orderliness of the ward and surroundings to be maintained.

4. h) **Time Planning** (well organised time - work schedule)

Objectives - 1. Staff the ward adequately for quality nursing care for 24 hours
11. To provide best possible experiences for the staff.
111. To comply with good personal practices and maintain morale.

Ward Sister is responsible for making the best use of the available staff. Two principle activities are involved here. a) the distribution of nurses' time throughout the week (b) the distribution within the 24 hours period.

a) Distribution of time throughout the week.

Sufficient staff is provied by the administration. Planning must take into account

the nursing load each hour of the day, all days of the week. Time is arranged as equitably as possible to meet the demands of each period - evenings, weekends to be considered.

Points to be considered in the planning of good nursing care.

a) Depending on the number of patients, at least two staff nurses are on duty during the day period.-U 7-1,1-7, 7-7. This is essential to cover meal hours.

b) A day together between their days off is planned for the ward sister and the nurse who is to relieve her. This provides for adequate reporting.

c) The ward sister is rarely off duty on Monday, which is a heavy day and the experiences of the weekend have to be known.

d) Day off before and after night is given so that nurse may have proper rest.

- weekly time sheet -

II. To Provide best possible experience for staff members

There is close relationship between time planning and assignment planning. Continous experience with the same patient is needed to be conversant with patient care. If interrupted or time planned for 2 or 3 days consecutive work, the worker does not gain good experience. In an active ward the turnover of patients is very rapid. The new nurse learns very little in caring for a group of patients unfamiliar to her, unless she spends 4 or 5 days at a stretch. This is important to remember in planning.

III. To comply with good personal practices and maintain morale.Unlike industrial concerns the patient care centres have to work on weekends and public holidays. Staff has to be on duty seven days and seven nights a week. Staff also has the right to have their days off and leave, to their wish, to plan for their family and personal affairs.

A rotation schedule is one method of meeting this need and maintain morale. It contributes to a more satisfied staff, because the members can plan ahead to meet their personal needs. The scheduled days off should not be changed without the ward sister's knowledge. Absence may be covered by overtime duty.

This schedule is made to cover 4 or 5 weeks. Here the night duty, evening duty, morning duty days off and leave are arranged. It should be flexible. Staff members' requests must be considerd not forgetting the patient care.

A rotation schedule is thus a morale builder and tends to stabilize the staff. There need to be a constant number of staff in the unit.

4. i)

Doctor's orders, reports and records of various kinds are essential for quality care to the patient. Some of them have legal and scientific value. Doctor's orders are written to protect himself, the patient, the hospital and especially the nurse. Orders should be well written, provide no chances of misinterpretation and are accompanied by his signature. The order sheet also indicates discontinuance of orders. Doctor's orders should be handled promptly and efficiently. The nurse is obligated to understand fully the purpose of the doctors orders, to carry out the order safely, effectively and report and record its results. Any inability to comply with, should be informed promptly to the consultant. Sister should control the practice of verbal order over the telephone, except in an emergency, in which case doctor should document it on his next visit to the ward.

4. j)

Reports are of prime importance to effective patient care, to good administration of the ward, and to well functioning of the hospital. Sister is responsible to maintain ward reports of patients and also reports about ward to the matron. Reporting within the ward goes on all the time to keep the staff informed. Formal reports occur when responsibility is transferred from one individual to another or a group. The charge nurse gives the report to the incoming staff. The assistant nurse receives a report when charge nurse goes on leave. Oral reports are given to the matron when she does rounds. Day, evening and night reports are written and handed over to the matron. All reports should be accurate, clear, complete and should bear the signature of the Sister in charge. They need to be written on time.

4. k) **Records**

Records may have historical significance and they may provide legal evidence or data for research. There should be a specific use of records to sister. The patient's bed head ticket is the most important hospital record. The ward sister has 4 direct responsibilities in relation to this document.

1) She must see its content protected and safeguarded from loss.

2) She is responsible that due care has been taken to safeguard the patient from injury. A complete note on admission will protect hospital in accusation of negligence. Well written daily observation will help consultant in diagnosis and in understanding his patient. They are just important to the nurse in making observations and in diagnosing her patient's needs.

3) Records are important to the sister to show that the doctor's orders are carried out. It is a protection for the nurse and hospital. Record keeping is different from ward to ward, according to the work they handle.

4) In education of her staff the writing of valuable nurse's notes the use of docter's progress record, the physical findings and lab reports to understand their patient and plan their care are very important.

B. PATIENT CARE MANAGEMENT

Patient and the family have a right to expect that the nurse knows most of the things that a patient should have for his happiness and well being and that she will find these which he feels are important to him.

Admission to a hospital ward is a new experience to a patient and the family. They are excited and anxious even when the patient is not serious. Everything should be done for the patient's comfort and show that he is wanted. He is accepted regardless of his economic status, his colour, education or condition. He anticipates that treatment and nursing care will be effective and safe without unnecessary discomfort.

Diagnosing the nursing need

Nurse should act quickly and consciously in making a diagnosis. In making a nursing diagnosis the Sister in-charge plays a key role in giving confidence to the patient so that he explains to her all that he needs. She gathers all these by observing, listening, thinking, reasoning and also by sympathizing with him. The sister helps in the diagnostic process primarily through her leadership. There is complexity of needs of patients, such as needs of the actually ill, convalesence and mild illness; who has lost his sight; who has a problem in communication; who is

weak and debilitated as a result of chronic disease; who has permanent dysfunction of his muscle or joint who is disoriented or confused; who is going home from hospital. Sister develops a plan of care considering above and delegates work with responsibility.

Planning patient care

Following the assessment of patient-needs a plan is made for his care by the Sister i.e. the plan is started on the patient's admission and is continuously revised as his condition changes. The patient as soon as he is able, should be encouraged to participate in his own care as a step towards self dependance.

The plan for the patient care is based on objectives which should be formulated in simple clear terms. Objectives are related to comfort, therapeutic and rehabilitative measures; protective and preventive measures, support and teaching-in all of which the nurse carries important responsibility. The plan should be transmitted accurately by a written order. A brief portrait together with nursing orders and clarification of doctor's orders is necessary for those who stay for short period. Critically ill patients will have a portrait of the patient, his needs and problems, the plan for his care including approach, a teaching plan, nursing orders and clarification of doctors orders. This can be adjusted for the situation.The sister's responsibility for nursing care plans is primarily one of leadership in helping the staff to see their value, making it possible for nurses to know patients through long term assignments, and arranging for joint planning when it is thought this will benefit the patient.

Designating patient care responsibility

Sister cannot handle this alone. So in the ward / clinics there are professional nurses both graduated (staff nurse) and student nurses, attendants, student attendants, labourers, permanent and causal . There are wide variations in education, experience and personality. The sister or one who acts for sister should be familiar with these differences and also their job descriptions. A professional nurse who has been in the ward could handle a patient without help . Those who need help should be given patient care under observation by sister. Actually ill patients are assigned to the staff nurse and less qualified ones to care for uncomplicated or less ill individuals.

Assignment are made on the basis of the patient's needs and the competency of the staff members to meet them. Several other considerations to keep in mind are namely - the best time for the offering of care which should be given by a staff nurse; the amount of supervision available for less able staff members; the needs of all patients which are to be assigned to one staff member; the geographic proximity of patients to be cared for by one person; the needs of all patients on the ward in relation to the 'ideal' persons to care for them; the importance of continuity in care. The team method is the best known way to maintain continuous care of the patient. In this a group of staff members with professional nurse as leader works together in a cooperative, coordinated way to provide individualized care for a group of patients. In the team method the sister assigns members and patients to the team. The team leader assigns team members to individual patients. The team leader through the team - conferences sees that members are kept informed about the patients. Together they study patients' needs and develops nursing care plans. The patient is familiar with all team members, and knows he 'belongs' However he still feels that one member is responsible for him and the team leader is overseeing his welfare.

Sister's role in team nursing is to guide the team leader, participate in team - conferences and to attend to the details of administration. She retains the overall supervision of patient care.

Values of team nursing are many for both patient and staff . This method can succeed if plans for instituting are carefully laid and team leader is a good nurse, well prepared for her responsibilities.

Supervision and Evalution of care

The sister is the supervisor of patient care in her unit There are 3 points which delineate supervisory process. They are :-

1. Assessing the sitution to determine the patient's condition and the effects of nursing and medical care.
2. Evaluting the overall quality of care given, to determine changes which might improve it.
3. Planning, putting into operation and evaluting improved methods.

Another outcome of supervision is the development of staff in incresing effectiveness for the improvement of patient care.

Inservice Education

Sister is responsible to teach the staff while at work by a planned programme. This is done according to the levels of learning. The ultimate aim of it is the improvement of patient care. This objective is achieved only through measures which will strengthen weak backgrounds of present personnel, orient new staff, and keep all members abreast of change. Immediate purpose of staff education is to help each individual develop to her highest potential. Such programmes are more acceptable if emphasis is placed on improving patient care rather than that of personal growth of staff members.

Practices of Sister which affect personal growth

1. Leadership of the sister which sets high standards of patients-care.

2. Her attitude towards-patients, visitors, clerks, minor employees, doctors, administrators has a direct influence on the staff.

3. Creation of social environment that encourages learning.

4. Appreciation and recognition of their efforts and good work.

5. Efficiency in managing the ward will encourage learning in which reports are complete, orders, accurately and promptly transcribed, equipment and supplies available and in good order goes to keep tension at a minimum. Frustration will inhibit learning and efficiency.

6. Utilization of learning opportunities - in daily rounds :-

   eg. Diagnostic findings and their significance, the rationale of new therapy etc.Sister's recognition of these will increase the learning of staff in two ways.

   I) Staff gains new knowledge.

   II) The interest is stimulated by sister taking time to keep them informed.

7. When sister involves all members of staff in participation in good patient care - this leads to growth of participants.

8. Sister encourages staff to learn by problem solving; experimentation and evaluation.

9. Utilization of staff patients to teach other individuals will sharpen their efficiency.

10. Orientation of the individuals to the ward by sister.

11. Guided experience of the staff to increase efficiency in patient care competency and to keep abreast of changes in medical and therapeutic practice.

PRE OPERATIVE CHECK LIST

Patient's Name : ..... B H T No: .....

Room No : ..... Age : .....

Surgeon : ..... Anaesthetist .....

PRE OPERATIVE

A) <u>To be completed by the Ward Medical Officer</u>

<u>Pre-operative assessment</u> <u>Date & time</u>

1. GC 4. R S
2. Head & Neck 5. Abdomen
3. CVS 6. Limbs

Signature of Medical Officer

B) To be completed by the Ward Nurse

Date and Time

Resp	Pulse	B	Temp

	Yes	No.	N/A
01. Consent Taken			
02. Identity band attached			
03. Make -up nail polish removed.			
04. Jewellery removed & secured			
05. Dentures removed.			
06. Contact lenses removed.			
07. Patient fasting.			
08. Mouth care given			
09. Bladder emptied.			
10. Enema given.			
11. Urine test done & recorded			
12. Blood suger test done & recorded.			
13. Weight recorded.			
14. Blood reserved (CBB/Other)			
15. Catheter inserted.			
16. Gown, Cap & Leggings worn			
17. Pre-medication given.			
18. I. V. in situ			
19. N. G. tube in situ			
20. Any known allergies			
21. B. H. T. Completed with all reports			
22. Any special comments by Nursing Officer			

Signature of Ward Nurse

CHAPTER 4

LABOUR ROOM MANAGEMENT

1. INTRODUCTION

The labour room in any hospital should be as clean as the operating theatre. Unlike any other ward, specialised Unit, clinic, O.P.D. where the patient comes with some ailment for treatment, in the case of confinement it is treated as a physiological process for any fertile female. The labour room should provide quality care to the mother and the new born and should be regarded as an intensive care unit for the mother and the baby.

The delivery room should be clean and warm for the birth of the baby. Privacy for the mother must be ensured.

In order to provide quality care to the mother and the baby, proper mangement techniques, methods and procedures, should be adopted.

Generally labour room should be a part of the maternity ward or an independent unit in close proximitly to the maternity ward. Labour room should be fully equipped with all facilities including stand by generator for power supply.

Safety of the mother and the baby depends on the efficient management of labour.

2. Objectives of the Labour Room Management

01) Provide the mother with healthy and pleasant environment in the labour room;

02) Assessment of the new born immediately after delivery;

03) Prevent complications;

04) To support the mother mentally and physically;

05) To maintain high standard of care;

06) To reduce infection;

07) Ensure asepsis in the labour room;

08) To impart knowledge and skills to the staff;

09) To provide necessary equipment for delivery;

10) To reduce neonatal and maternal mortality.

Admission procedures to labour room

Mother is sent to labour room at the end of 1st stage. The labour room in charge receives the mother by checking BHT and puts her to correct delivery bed.

Check F. H. S., pulse, respiration, BP, bleeding PV, abdomen, bladder, IV drip and enter necessary records in the B. H. T. and the labour room admission register and prepare mother for safe delivery. Any abnormal labour should be brought to the notice of the doctor.

3. CARE OF MOTHER IN LABOUR

The mother should not be left alone. Provide the mother with a relaxed, friendly atmosphere.

3.1 Posture

Should be allowed to lie on her side, as in this position placental perfusion is improved.

3.2 Nutrition

A record is kept of all oral and intravenous fluids given. As far as possible mother is not given anything orally.

3.3 Care of bladder

Encourage to empty bladder every 2 hours as it causes discomfort and also delays progress. If the mother in labour is unable to empty her bladder it will be necessary to catheterise her.

3.4 General Comfort and hygiene

i) Bath or wash at the onset of labour.

ii) Frequent sponging of the face, neck is most refreshing.

iii) The hair should be combed away from the face and neck.

iv) Vulval washes when necessary to keep mother comfortable, as well as reduce the risk of infection.

v) Correct washing of hands before attending on the mother,will help prevent infection of the genital tract.

vi) Once the membranes have ruptured sterile vulval pads should then be worn and changed frequently.

vii) Careful aseptic techniques must be carried out when making examination per vagina and at the time of delivery.

3. 5 Evalution of mother on admission to the labour room.

Monitoring of mother during and after labour

Observations

Observations to assess the maternal and foetal condition and progress in labour are carried out regularly and recorded on a partogram, a special chart where all observations examinations and drugs administered in labour are recorded.

3.6 Maternal Conditions

1) Sign of labour - show and rupture of the membrane. On vaginal examination the cervix will be dilated.

2) Temperature four hourly

3) Pulse quarter hourly as labour progresses

4) Blood pressure - as labour progresses it is usually recorded hourly. If blood pressure is very high or low half hourly.

5) Intake, Output - All intake and output should be recorded on the partogram.

6) Urine tested for albumin and suger in pre-eclampsia and diabetic mothers.

3.7 Contractions

The strenght, frequency and duration of uterine contractions are assessed and recorded every 15 minites. They provide valuable information about the progress of labour. Contractions are assessed by placing the hand lightly over the fundus of the uterus.

3.8 Loss per vagina

The time at which the membrane rupture should be recorded and the liquor amni observed to note whether it is stained with meconium - usually a sign of foetal distress. The show and any bleeding per vagina should also be observed.

3. 9 Foetal heart monitoring

Observations to assess the foetal well being are carefully made throughout labour. F. H. S. may be monitored every 15 minutes recorded with a foetal stethoscope or a C. T. G.

The normal foetal heart rate is between 120-160 per minute

The foetal heart changes can be detected by listening before during and after a contraction with a foetal stethoscope. Tachycardia occurs when there is oxygen deprivation because the heart beats faster in an attempt to maintain oxygenation of the tissues. Foetal tachycardia may also be associated with maternal pyrexia or ketosis.

Bradycardia is a foetal heart rate of less than 120 per minute. It may follow tachycardia and is more serious sign of hypoxia since it indicates that the heart muscle is suffering from oxygen deprivation.

3.10 Assessment of Progress

Done by careful abdominal palpation and on examination per vaginum.

An abdominal examination is first made to determine the lie, presentation, position and whether the foetal head is engaged.

Examination per vaginum

Indications : Vaginal examination during labour is made to

i) Confirm the onset of labour on admission;
ii) Assess progress in labor;
iii) Confirm presentation.

3.11 Method

The midwife should explain to the mother the nature of the examination, she is about to perform. The mother's bladder should be empty and the vulval area washed to minimise the risk of sepsis.

This examination is an aseptic procedure and therefore wash hands and put on sterile gloves and wear a gown and cap.

3.12 Preparation for Delivery

The delivery room should be clean and warm. Privacy for the mother. A sterile delivery trolley is prepared including sterile gown and gloves for the mid-wife who is to deliver the baby.

i) Local anesthetic, syringe and needles

ii) Syntocinon 6 units drawn up in a syringe in readiness for active management of the third stage of labour. A warm cot is prepared for the baby and the resuscitation equipment is checked.

3.13 Conduct of Dilivery

i) Establish a good relationship with mother
ii) Keep her informed about progress
iii) Give reassurance and encouragement
iv) Put leggings to both legs of the mother.

The midwife washes her hands and puts on a sterile gown and gloves in preparation for the delivery.

Before the birth takes place the vulva should again be washed with an antiseptic such as hibitane lotion (1:2000 solution) or savlon 1:30, sterile towels cover the delivery area and a sterile pad covers the anus to reduce the infection.

The delivery should be allowed to proceed slowly and steadily.
Episiotomy is necessary to prevent a severe perineal laceration.

3.14 Care of mother after delivery

The anterior shoulder is delivered the mother is given an intra-muscular injection of syntomatrine 2 ml (6 units).

The midwife carefully observes the mother's general condition and any blood loss per vaginum. The following sings indicate the separation and descent of the placenta.

Sign of separation - Bleeding
Sign of descent of cord
Uterus smaller and rounder and fundus rises as the placenta moves down and the mobile cord lengthens.

3.15 After expulsion of placenta.

i) Make sure that the uterus is well contracted and blood loss per vaginum is not excessive.

ii) The perineum vulva and vagina must be inspected in a good light in case there are any lacerations.

iii) Call a Doctor to repair an episiotomy or any laceration immediately.

iv) The vulva and perineum are gently cleaned with warm antiseptic lotion, a sterile pad is applied.

v) If placenta is not expelled inform Doctor after half an hour. If bleeding occurs inform Doctor immediately.

vi) Observations

Bleeding PV) Pulse, Respiration) Condition of uterus) Temperature) Blood pressure)	1/4 hourly to be checked and recorded.

Placenta and membrane to be examined by Doctor.

4. Evaluation and Care of the New Born

Immediate care of the new born includes

i) Gentleness and prevention of infection

ii) Establishment maintenance of respiration

iii) Care of Umbilical cord

iv) Care of eyes

v) Stabilization of the temperature

vi) Identification of infant

vii) Maintaining a record of observations.

ASSESSMENT OF THE BABY'S CONDITION AT BIRTH - APGAR SCORE

	Sign	O Point	1 Point	2 Point
A	Skin	Cyansis Pallor	Periph Cyanosis	Pink
P	Muscle Tone	Flaccid	Move Libs	Good
G	Resp Effort	None	Gasps	Good
A	Heart Rate	None	< 100	> 100
R	Response to Stimulus	None	Slight	Good

Score above 7 - Good

Score 6 or less - Perinatal Asphyxia

Score 3 or less - need resuscitation

Within sixty seconds after infant body has been completely born five objective signs should be evaluated.

4.1 Establishment and Maintenance of Respiration

Any infant who does not breathe within sixty seconds after birth is in danger of Asphyxia. Hence the need for close observation of the infant and to have everything in readiness for resuscitation.

1) All mucus, blood and meconium must be sucked out before the baby has a chance to inhale them.
This may be done by a mechanical sucker or syringe as soon as head comes out.

ii) Care of eyes
The eyes may be cleaned with sterile cotton wool to remove any infective secretion such as the gonococcus.

4.2 Care of Umbilical Cord.

Two clamps are used to compress the cord. They are placed about 2 inches from Abdomen.

If possible this is not done until the cord has stopped pulsating and after the cord has been clamped a ligature is tied about 2 inches from the Abdominal wall and the cord is cut . After removal of the clamp the cord should be turned back on itself and tied a second time with the same ligature.

Extreme care must be taken that the cord does not become contaminated.

4.3 Stabilization of the Temperature of the Infant

The temperature of the new born usually drops immediately after birth, and returns to normal in eight hours.

The temperature in the delivery room is lower than that in utero. To raise the body temperature to normal the infant should be wrapped in a warm sterile cotton flannel blanket immediately after birth.

4.4 Identification of the infant

Before cutting the cord all infants must be identified in some manner before they are removed from the delivery table or bed. Identification numbers for both the infant and the mother placed above their wrists, while she is still on the delivery table or bed. The mother should be shown the identification wrist tape and the sex.

4.5 Cleaning of the Baby

After delivery the baby is cleaned of any blood or meconium by gentle wiping with swabs soaked in sterile water and then dressed in a gown and napkin and placed in a cot. (Vernix should be cleaned after 8 hours)

4.6 Breast Feeding

The infant should be put to the breast as soon as possible after birth.
He should be carefully observed during this feed for evidence of inhalation or difficulty in swallowing.

4.7 Examination of the new born

Weight - The average weight at birth 3 kg
Length - The average length at birth 50-52 CM.
The head - The average circumference is 34 CM
Sex -
Anus - Spina bifida
The eyes - Small subconjunctival haemorrhages bright red in colour.
The mouth - Should be inspected for cleft palate tongue tie. cleft lip is readily seen.

The mouth may be drawn to one side due to facial paralysis. Excessive frothy mucus suggest an oesophageal atresia.

The arm and hands - moving freely and if no fracture, dislocation or paralysis may be suspected.

The cord should be examined for oozing.

5. Resuscitation of the Asphyxiated Baby

Causes of Asphyxia at Birth

i) Thick meconium in the upper air passages

ii) Prolonged labour with the membranes ruptured and infected liquor

iii) Gestation < 36 weeks

iv) Insrumental or surgical deliveries

v) Malpresentation

vi) Twins and higher multiples

vii) Foetal distress

viii) Rhesus incompatibility

ix) Drugs depressing the C. N. S.

x) Trauma

xi) Prematurity

Resuscitation procedure is usually carried out in the following order (Paediatric House Officer must be present)

1) Clear the pharynx mouth and nostrils by suction (use soft rubber catheters) Negative pressure of the suction apparatus 50 mmHg each suction should be done only for 10-15 seconds.

2) Infant should be received in to a sterile towel which lies over warm non woolen blanket.

3) He should be placed with his head at a lower level than his feet on resuscitation table until suction completed. Then prop up to assist breathing.

4) If the infant has not started to gasp within one minute oxygen may be given with the mask and the Ambu bag or the paediatric breathing circuit. Ambu ventilation should be done with three fingers. The pressure should not exceed 30 cm H_20 for a neonate. When 2 fingers used - pressure is about 10 cm H_20. When 3 fingers used - pressure is about 20-25 cm H_2O.

5) Baby who has been depressed by drugs such as Pethidine given to mother shortly before delivery. Naloxone 0.01mg. can be given to the umbilical vein. If no response repeat after 15-30 minutes.

6) If an infant has not established adequate respiration within 3 minutes of complete delivery and earlier if the heart rate is below 100/min, the most effective technique is the passage of an endotracheal tube using an infant laryngoscope. Contents are sucked out aseptically through the tube and oxygen may be given via Ambu Bag or the paediatric breathing ciruit

The first sign of recovery is strengthening of the heart followed by attempts at respiration and improved colour. Once baby is breathing spontaneously it should be considered whether it requires transfer to a special nursery.

Other Measures - Cardiac massage if the heart rate falls below 80. Acidosis should be corrected by bicarbonate with 5 ml. of 10 % Dextrose via Uumbilical vein.
Drugs - Here is little place for drugs in resuscitation.

6. Registration of Birth

Birth registration is done in labour room Birth Register by Nursing Officer in charge immediately after baby is born.
Particulars stated as follows

01. DATE
    SERIAL NO.

02. EXPECTED DATE OF DELIVERY

03. BED HEAD TICKET NO.

04. DISC NO (IDENTIFICATION NUMBER

05. SEX

06. WEIGHT

07. POSITION

08. DATE AND TIME OF BIRTH

09. RACE AND RELIGION

10. NAME AND ADDRESS OF MOTHER

11. AGE OF MOTHER

12. WHETHER MARRIED

13. PLACE OF MARRIAGE

14. PARA

15. BLOOD PRESSURE

16. EPIS

17. P. P. H.

18. SYNTOCINON DOSE IF GIVEN

19. NAME AND ADDRESS OF FATHER
OCCUPATION : RACE : RELIGION :

20. H. O > ON DUTY

21. N/S OR NI /C ON DUTY

22. DELIVERED BY

23. SIGNATURE.

After registration birth chit is issued on Health 552.
When Health 552 is submitted to Birth Registrar of the Hospital he will issue registration B/F 2 ST 2 E 6/77

Then mother or father can register the birth in the hospital.
Birth registration number should be entered in Bed head ticket before discharging the mother and baby from the hospital.

7. Disposal of Products of Conception

Careless or wrong handling of waste can be dangerous for the patient and other hospital workers, or it may spread diseases within or outside the hospital.This is possible via vectors like insects, birds, rats etc.

Instructions have to be given on how to deal with different types of waste and how to make special guidelines for labour rooms concerning waste disposal.

Disposal of sharps

Needles must be disposed of in puncture resistant containers made of metal, plastic or heavy cardboard and burnt or incinerated.

The methods for disposal of waste-

i) incineration
ii) burning in a safe area
iii) rinse in to drain pipes
iv) inactivate them with other chemicals

8. Management of All Deliveries - Universal Precautions

Minimize personal contact with blood

01) Full length - Long sleeved labour room gown

02) Plastic Aprons

03) Foot Wear (boots)

04) Spectacles

05) Gloves (elbow length gloves for manual removal of placenta)

06) Early de - contamination of all blood spills (heavy duty gloves, plastic aprons, boots rubber squeegees, dust pan, fresh sodium - hypochloride)

07) Special sharps containers

08) Suction - by Electrical suckers (no-mouth operated suction)

09) Cord blood - needles and syringes may be used

10) Examination of placenta - Gown and mask; gloves may be used.

8.1 Care of HIV positive mother in labour (Universal Precaution)

i) Single Room
ii) Only very essential equipment (Disposable)
iii) Disposable rubber aprons, gown, spectacles cap mask boots
iv) Placenta - double bagged and incinerated
v) Disposal - special container
vi) Used Linen - T. C. L. 10%, over night

(T.C.L. powder 7gms. for 1 ltr. of water)

Handwashing is the single most important procedure for the prevention of hospital acquired infection.

8.2 Universal Precautions

1. Personal hygiene
2. Hand washing
   Immediately after contact with body fluids.
   After prolonged contact with a patient
   After handling linen contaminated with body fluids
3. Cleaning spills
   Always wear gloves to clean the spills use 10% T C L or Lysol, Use common disinfectant (Bleach)
   Use heavy gloves and boots when cleaning toilets, drains and soiled linen
5. Wear a mask and eyeglasses or goggles when splashes of blood or other body fluids are expected. This may occur assisting in a birth.
6. Needle stick and other sharp injuries should always be handled with extreme care.
7. Nurses should always - if they have open wounds on hands and arms be covered with water proof dressing.

9. Infection Control

1. Foot wear at entrance
2. Gown ; disposable mask, plastic aprons and caps at entrance to labour room.
3. Trolley changing
4. Packet systems (Auto claving)
5. Culture swabs from the staff once in 3 months.

6. Less personnel
7. Hand washing
8. Disposable syringes and cannula

10. Daily Cleaning

i) Remove used items eg. suction bottles basin tray wash with disinfectant.
ii) Wipe furniture with damp cloth and dry them
iii) Wipe lower part of the walls with wet cloth and dry with a dry cloth.
v) Wipe the doors with a wet cloth
vi) Wash beds with soap and water
vii) Wash mackintosh with soap and water
viii) Cleaning spills - drains soiled linen toilet10 % T. C. L., can be used.
ix) Mopping to be done twice a day

10.1 Weekly Cleaning

All the instruments syringes thoroughly clean once a week. Beds and trolleys thoroughly washed once a week. Mattresses to sun once a week and when necessary.

Common disinfectants - Bleach, Teepol, Lysol

11. Staff Norms

Labour Room - Midwifery trained nurses 1 for 4 beds
Midwife 1 for 10 deliveries
workers female (sanitary) 01 | each
Workers female ordinary 01 for | unit

MINIMUM STAFF NEEDED FOR LABOUR ROOM WITH 7 BEDS

SHIFT	NURSING SISTER	NURSES	MIDWIVES	WORKERS
7.00 am - 3.00 pm	01	02	04	02
1.00 pm - 7.00 pm		02	03	02
7.00 pm - 7.00 am		02	03	02

12. Duties of the staff

12.1 Nursing Officer (Special Grade)

i) Allocate staff according to the needs.

ii) Shall report to Director and the Hospital Administrator on current staffing and future staffing and problems

iii) Maintain and update procedure manuals

iv) Evalution of equipment and supplies

v) Shall attend labour room staff conference

vi) Shall organise inservice training

vii) Shall counsel staff on professional and personal problems

viii) Evalution

12.2 Nursing Officer Gr. 1(sister)

i. Shall manage labour room according to laid down instructions

ii. Shall be responsible for drugs and inventories

iii. Supervision and training of the staff, including pupil nurses/pupil midwives

iv. Shall organize conference with the staff and any other duties assigned from time to time.

12.3 Nursing Officer Gr.11

i. They shall provide nursing care for mothers and babies-Emotional support to mothers.

ii. Observation and assessment of mothers and babies and reporting their conditions to the medical staff.

iii. Conduct deliveries

iv. Shall carry out the duties of charge nurse in her absence

v. They shall report to the Sister and complain defects in drug supplies or equipment.

vi. Maintaining Birth registers and other registers including collection and recording of data.

vii. They shall participate in regular meeting of labour room staff

viii. They shall partcipate in teaching programmes and all other duties of a Staff Nurse.

12.4 Hospital Midwives

1) Prepare Expectant mothers for delivery.

2) Take normal deliveries.

3) Bring to the notices of Matron or Nurse in charge and in their absence the doctor in-charge any abnormalities of the mother or mothers in labour.

4) Bathe the babies and attend to their requirements.

5) Any abnormalities with regard to the baby must be brought to the notices of the Matron or Nurse or in their absence the Doctor in-charge.

6) Attend on all - delivered mothers, such as swabbing sponging feeding etc.

7) Keep the labour room and ward clean and tidy.

8) To be responsible for the linen, surgical instruments and other equipment in the labour room and maternity ward along with the attendants in these sections.

9) Accompany maternity cases
   a) In ambulance when transferred to another hospital or Institution
   b) From Labour Room to other units such as X' Rays etc.

10) Attend to Dressings, pads, etc, for labour Room and Units.

11) Summon promptly the Matron, Nurse or Medical Officers in the case of excessive bleeding or any other complications before and after delivery.

12) a) Health educcation of mothers regarding ante-natal and post natal care, feeding care, and care of babies etc.

b) Assist in supervision of occupational therapy for expectant mothers.

c) Establish good relationship with expectant mothers on admission to the Unit.

13) Whilist on duty she shall be in uniform supplied by the Department of Health.

14) Any other duties expected for Midwife eg. medication, temperature, diets, urine testing.

12.5 Ordinary Labourer

i) They shall sweep, mop, wash and clean the labour room
ii) They shall bring stores (Drugs, 0_2 etc)
iii) Transport mothers and babies with midwives to post natal ward and for investigation.
iv) Washing of gloves.

12.6 Sanitary Labourer

i) They shall wash and clean toilets regularly.

ii) Wash and clean all equipment bed pans, pails and trays regularly.

iii) They shall see that all dust bins and soiled dressing are removed and replaced after cleaning.

iv) Wash and clean all drains and clean the garden.

v) They shall immediately report to the sister any defects or losses in the toilet.

vi) They shall wash and dry soiled linen in labour room and any other duties.

13. Role of the Infection Control Nurse in the Labour Room (Maternity Section)

1 Surveillance of hospital acquired infections. Develop a practical system of monitoring recording reporting and evaluating hospital associated infection.

2 Daily follow up new infection.

3 Follow up of bacteriological samples taken from patients

4. Training of personal in infection control
   a) Minor staff in the labour room and other wards
   b) Nursing staff in the labour room and other wards
   c) Conducting awareness programmes to patients and visitors in maternity section

5. Development, supervision and implementation of infection control policies in the maternity section.

   The purpose of this work is to see that all patient care practices are done properly and that the principles of infection control are taken into account

   Written infection control procedures for the maternity section.

   Regularly supervise if the required aseptic procedure and policies are followed

6. Attend to Staff Welfare

   All cases of accidental exposure, sharp injuries should be reported to rel evant authorities for suitable follow up.

   Organise hepatitis 'B' vaccination to maternity section staff.

14. Emergency Cupboards Trays and Equipments

14.1 P. P. H. Tray

ERGOMETRIN	05
SYNTOCINON	25
NORMAL SALINE	02
GELAFUNDIN	02
5% DEXTROSE	02
I V CANULA 16 G-18 G	02
I V SETS	02
D. T. FORMS	
STERILE SYRINGES & NEEDLES	

14.2 CAESAREAN EMERGENCY TRAY

FLAGYL	1 BOTTLE
NORMAL SALINE	1 PINT
IV CANULA (16 G - 18 G)	01
1 V SET	02
FOLEYS CATHETER	01
AMPICILLIN	02 VIALS
D. T. FORMS	
EMERGENCY OPERATION LIST	
STERILE CHECK CLOTH AND JACKET	

14.3 Delivery Set (20 Packets)

KIDNEY TRAYS	02
ARTERY FORCEPS	02
SCISSORS MAYOS	01
SCISSORS UMBILICAL	01
G. S. TOWELS	02
CORD THREAD	02
PADS	02
GAUZE SWABS AND COTTON SWABS	

14. 4 Suture Set (15 Packets)

KIDNEY TRAY	01
G. S. TOWEL	01
NEEDLES CUTTING	02
NEEDLES ROUND BODY	02
NEEDLE HOLDER	01
CATCH FORCEPS	01
GAUZE SWABS	05
SCISSOR	01

7 Beds Labour Room must have above mentioned packets per day.

Autoclaved and readily available.

Electric suckers 07 for 7 beds.

Baby Room - Suckers 02

14.5 Forceps Delivery Set

KIDNEY TRAYS	02
ARTERY FORCEPS	04
GREEN ARMITAGE	03
FORCEPS SPONGE HOLDING	02
FORCEPS WRIGLEY'S	02
KIELLAND'S FORCEPS	02
NEEDLE HOLDER	02
SCISSORS	03
CATCH FORCEPS	01
FORCEPS CURETTAGE	01
SUCKER TUBE	02
G. S. TOWELS	05
GALLIPOLE	01
STERILE GLOVES PAIRS	03

GAUZE SWABS COTTON SWABS AND PADS

AUTO CLAVE AND READY FOR USE.

14.6 Baby Cleaning Tray

SURGICAL SPIRIT

STERILE SWABS, GAUZE CORD THREAD

GLASS ROD TO CHECK ANUS

MEASURING TAPE

CATHETERS SIZE 5.8 = 2

(Infant weighing machine should be available)

14.7 Emergency Tray - Drugs

(Paediatric)

ADRENALINE 1/1000	2 vials
ATROPINE	10 vials
XYLOCANE	3 vials
NAH CO 3 SODIUM BICARBONATE 7.5%	5 vials
50% DEXTROSE	5 vials
25% DEXTROSE	5 vials
10% DEXTROSE	5 vials
FRUSEMIDE	10 vials
AMINOPHYLLIN	5 vials
DIAZEPAM	5 vials
DEXAMETHAZONE	5 vials
HYDROCORTISONE	15 vials
DISTILLED WATER	20 vials
1/5 N. SALINE	5 vials
SCALP VEIN SET	5
CANNULAE - 25g	
DISPOSABLE SYRINGES (50 cc, 20 cc, 10 cc, 2cc)	
IV SET	3 set
FILES	2

14.8 Paediatric Resuscitation Tray

BABY LARYNGOSCOPE	01
AMBU BAG (PAEDIATRIC)	01
FACE MASK (PAEDIATRIC)	01
INTRODUCER (STYLET)	01
SUCTION CETHETER (SIZE -)	04
LIGNOCAINE JELLY	01
BABY AIR WAY	02

BANDAGES OR LEUCO PLASTER
TORCH
GLOVE PAIR
02 CYLINDER WITH FLOW METER
PAEDIATRIC ANESTHETIC SET (JACKSON MODIFICATION OF AYRE'S T PIECE)

* T PIECE
* GREEN TUBE @ CONNECTON FOR OXYGEN
* CATHETER MOUNT
* BREATHING BAG (OPEN ENDED)
* ANGLE PIECE
* PAEDIATRIC FACE MASK

14.9 EMERGENCY TRAY (ADULT)

HYDROCORTISONE	20
AMINOPHYLLINE	10
BRICANYL	05
ARAMIN	05
PROMETHAZINE	10
FRUSEMIDE	20
DIAZEPAM	05
XYLOCAINE	05
VERAPAMIL	05
PROCANAMIDE	05
MORPHINE	03
PETHIDINE	03
VIT K	03
ERGOMETRINE	05
CYNTOCINON	20
NALOXONE	05
SODIUM BICARBONATE	06
50% DEXTROSE	10
ATROPINE	10
ADRENALINE 1/1000	03
25% DEXTROSE	10
IV SET	05
IV CANULA	04

N. SALINE	05
CALCIUM GLUCONATE	05
DOPAMINE	02
5% DEXTROSE	05
GELAFUNDIN	05
MANNITOL	03
HARTMANNS SOLUTION	05
DARROWS	05
CUT DOWN SET	01
DIGOXIN	01
PROPANOLOL	01
STERILE SYRINGES	

14.10 RESUSCITATION TRAY (ADULTS)

LALRYNGOSCOPE WITH ADULT CURVED BLADE	
ENDOTRACHEAL TUBES WITH CUFF (7mm, 7.5mm, 8mm, 8.5mm)	
INTRODUCER (STYLET)	01
10 cc DISPOSABLE SYRINGE	01
LIGNOCANE JELLY	01
BANDAGES	02
MAGILL FORCEPS	01
AIR WAYS (SIZE 2,3,4,)	04
AMBU BAG @ FACE MASK	01
SOURCE OF OXYGEN	
TORCH	
GLOVE PAIR	
SUCTION CATHETERS	05

15. Management of Linen

15.1 Linen

Adequate Linen - Bed sheets pillow cases, G. S. Towels, Draw sheets, Baby gowns. Surgeon gown, Mackintosh, Diapers Baby Blanket, Check cloths and staff gown Mask, caps, towels, Mattress covers, cots, covers and mosquito nets.

15.2 Laundry

Linen should be washed with detergent and water, never put them down on the floor (10% T. C. L.) Daily dhoby must be available.

15.3 Care of Baby Room

1. Baby cots, walls, weighing machine clean with soap and water.
2. Equipment such as cleaning trays ambu bag, rectal thermometer, suckers should be cleaned after use.
3. All the linen used for baby must be sterile

16. Information Desk

Great anxiety is caused by lack of information to the mother and the family. Therefore it is necessary to have an information desk near every labour room with qualified Nursing Officer or a Midwife when patient is in labour room provide adequate information to her husband or relatives.

17. Maternity Statistics

Returns - Monthly return to be sent to record room

Bibliography - Obstetric illustrated
Fourth Edition
Miller R. Callander

POST DELIVERY OBSERVATION CHART

TIME	PULSE	BP	UTERINE RETRACTION	BLEEDING /CLOTHS	PACKS/ SWABS	REMARKS

CHAPTER 5

OPERATING THEATRE MANAGEMENT

Introduction

Operating theatre complex is an important and specialized area in hospital services with many a problem in personnel, supply and regulations. Success of the operations and the protection of patients' lives depend on the efficient management of the operating theatres.

In institutions where routine and emergency surgery is carried out by different surgical specialities it is prudent to have the operating department as an independent building or located in the ground floor or first floor of a multistoried building away from the general rush area like clinics, OPD and centralized with ICU, CSSD and labour rooms.

All operating theatres should be located in one place in the hospital. A section of the operating theatre suites may be separated for emergencies, casualties, septic surgery, obstetrics, endoscopies, orthopaedics, ENT and eye, neurosurgery and general surgery. The total number of suites required will depend on the number of surgical beds, emerging admission pattern and the population served.

Objective of Management

* To Provide maximum patient care;
* To maintain safe, environmental condition for patient and staff.

Construction and Planning

The following aspects must be considered.

- Location
- Size
- Walls
- Floor
- Air conditioning and ventilation
- Light system
- Water supply
- Waste disposal area (washing)
- Scrubbing area
- Anaesthetic area
- Sterile storage
- Store rooms
- Equipment room
- Changing rooms
- Tea room
- Seminar room
- Receiving area
- Recovery area
- Piped medical gases and piped vacuum area.

Location

- First floor or ground floor.
- Away from the general rush area eg. clinic, OPD.
- Centralization of CSSD, ICU and LR

Size

- Depends on bed capacity of the surgical section and type of the operations
- Operating room should not be too small or too large.
  Ideal size is 20 x 18 feet.

Walls

- Completely tiled up to ceiling level. Tiles should be soft shade of light blue, green or grey.

Floor

- Terrazzo composition.
  Grounded as a precaution against explosion

Air conditioning and ventilation.

To main constant humidity and temperature. Ideal temperature is 20^0C - 24^0C and humidity 45 % -55%.

- Pressurized from sterile area to clean area to dirty area.
- No suction effect from dirty area to clean area.
- Should have 18-20 air change per hour to maintain heat balance and reduce bacterial contamination.
- Anaesthetic gases and suction exhaust are vested out through separate exhaust channels.
- The preparation room and sterile storage should have similar ventilation as main operating room.
- Portable room coolers and ceiling fans are not satisfactory.
- Window type air conditioners may be used but must be located at least one meter above the floor or one meter below the roof. The filters should be efficient and periodically changed.
- Regular maintenance should be done.
  If ventilation system is poor and contaminated air is inducted theatre infection rate will go high.
- Comfortable climate ensure work efficiency.

Light System

- Solid rounded field of light.
- Minimum amount of heat.
- Absence of strong shadows.
- Easy to clean and adjustable.
- Stand by generator for power failure.

Water Supply

Adequate water pressure. The sterilizers need an adequate water head. Most sterilizers need water pressure of about 30 ft.

Waste disposal area

Sterile store room

- Away from waste disposal area
- Should be air conditioned
- Free from contamination / dust
- Easy washable floors and walls
- Stainless steel racks for easy cleaning
- Stainless steel trolleys
- Stainless steel cupboards

Recovery area

- Seperate trolleys with rubber mattress.
- Piped oxygen outlets and humidifiers with flow meter.
- Prepared intubation tray.
- O_2 mask catheters and ambubag.
- Wall vacuum facilities or suction machine.

Piped bio medical gases

- Should have adequate cylinders of O_2 , NO_2 and compressed air.
- Cylinder bank should be located outside of the theatre.
- Audio visual alarm system to be fixed on the clean corridor of the theatre.
- Should have seperate emergency line for each gas.
- Automatic change over system is recommended. (Manual changing is not satisfactory)

The operating theatre has five distinct zones for work, materials and personnel movement.

1. Protective Zone

Consists of the

- Changing rooms for all staff with conveniences.
- Transfer bays for packets, materials and equipment
- Duty rooms

- Store rooms
- Seminar room

2. Clean Zone

Connects internally the protective zone and operating suites and in addition has :

- Scrubbing area
- Anaesthetic room
- Rest rooms
- Clean corridor
- Store rooms

3. Sterile Zone

Consists of the

- Main operating area
- Sterile bay and sterile storage area

4. Reception and recovery zone

Consists of the

- Patients receiving area (Trolley changing area)
- Post operative area

5. Disposal Zone

Washing area.

<u>Staffing Pattern and Norms</u>

- O. T. Superintendent or special grade nursing officer for all the theatres.
- Nursing Sister for one theatre suite.
- 30 nurses for two wing theatre
- 16 ordinary labourers for 24 hours.
- 04 sanitary labourers for 24 hours.
- E.C.G. technicians for cardiac theatre
- 02 theatre technicans for all the theatres for repairs and maintenance work.
- One Seamstress for each theatre suit.
  (sewing of various type of theater linen and gauze towels mending of theatre linen)

Importance of cleanliness and Aseptic techniques

Theatre nursing staff is responsible for proper cleaning of the theatre and maintaining of aseptic technique for prevention and control of infection.

Cleanliness is essential in the theatre, but cleaning policies should be realistic and not established by tradition.

Daily routine cleaning

1. The theatre should be cleaned at least one hour before the operating list commences.
2. All flat surfaces, over head lights and furniture should be damp dusted using accepted detergent.
3. Floor must be cleaned whenever they are dirty.

- Mild detergent can be used for floor cleaning. eg. 1:30 Savlon;
- Use squeegees for mopping and drying;
- Ideally floor should be cleaned by a machine which scrubs and suction-dries.
- Separate squeegees should be used for seperate areas in the theatre.

Cleaning between cases

Only areas which have become contaminated during the previous surgery should be cleaned.

Daily cleaning at the end of the day

The routine for daily cleaning is the same as that carried out before a list, but attention should also be paid to walls, and the floor. Soiled areas should be cleaned with mild detergent and subsequently dried.

Weeky cleaning

All furniture equipment and movable items should be removed from the theatre and the floor and walls should be washed using a detergent. Air condition grills should be cleaned before washing the theatre. Ceiling should be washed once in 3 months.

Preparation for an infected case

1. Preparation is the same as for other cases.
2. Only absolutely essential equipment, instrument and personnel should be in the theatre.

Surgery on HIV and Hepatitis B Positive Patients

1. Universal precautions should be taken.
2. Double gloves and protective eye shields should be used by the surgical team.
3. Yellow polythene bags to be used for clinical waste disposal. All such waste should be soaked in 10% sodium hypochlorite before disposal.
4. 2% glutaraldehyde should be used to sterilize heat sensitive items.

Cleaning after infected surgery

Instruments and linen contaminated with pus should be put in 1:40 lysol solution for 2 hours and washed with soap and water before autoclaving and laundering. Yellow polythene bags should be used for the disposal of clinical waste. Floor and walls should be washed with detergent and later dried.

After surgery on a gas gangrene or tetanus patient the theatre floor should be washed once with 1% Formaldehyde and water and 3 to 4 times with a detergent or soap and water. The floor must then be dried.

Maintenance of sterility in the theatre

1. No one should be allowed into the theatre without changing into theatre clothes including sterile caps, masks and gown.

2. Outside trolleys should not be allowed in the theatre area.

3. Standard packeting system should be encouraged. This improves sterility and avoids waste. The shelf life of a packet is only 10 days and thus all packets should be dated. Samples from every batch sterilized should be tested for sterility even though heat indicators may be available.

4. Nasal and throat swabs must be taken from all thetre staff including surgeons once in every 3 months and appropriately treated.

Sterilization procedures

1. High pressure sterilizing is the recommended method for theatre instruments, linen and dressings (134 ^{0}C 30 mts and 15 lbs of sq ft pressure.

2. Cold sterilization
   Test sensitive articles such as endoscopes should be sterilized by cold sterilization method.
   2% glutaraldehyde for 30 mts and wash with sterile water.

3. Boiling.
   100^{0}C for 30 mts is not recommended for theatre use,

4. Ethylene oxide sterilization could be used for heat sensitive articles and rubber goods. Ethylene oxide is highly poisonous and unaccepted sterilization cupboard must be used.

5. Dry heat sterilization Hot air oven 160^0 C for 2 hours. Glass ware can be sterilized.

Control of Infection

Infection continues to be the greatest hazard of surgery. The knowledge and skill of the surgical team will not produce the desired results unless every effort is made to avoid infection of the patient.

Strict aseptic discipline must be applied at all times. All those who use the theatre must cooperate in the application of recognised procedures and it is the responsibility of theatre managers to ensure that these procedures are followed.

There are many factors which affect the rate of infection.

a. The type of surgery performed
b. The skill of the surgeon.
c. Cause for surgery and age.

d. The length of stay in hospital
e. Duration of surgery
f. Skin preparation and draping procedure
g. Asepsis of the theatre.
h. Aseptic discipline of the theatre staff
i. Sterilization methods adopted and effectivity.

Functions and Responsibility of Staff

Medical Staff

- Routine list should be sent to theatre previous day.
- Emergency list could be sent to theater 1/2 hour before commencement of operation.
- Surgery should be started at scheduled time.
- Should maintain theatre policies, procedures and methods
- Aseptic technique should be monitored properly
- Maintain good interpersonal relationship with other staff.
- Teaching of staff.
- Proper documentation

Nursing Staff

- Receiving of patients
- Care of patients
- Assisting the surgeon and anaesthetist team.
- Circulating of sterile instruments, linen, suture materials and necessary items for surgery.
- Supervision of sterilizing procedures
- Proper cleaning.
- Maintain asepsis
- Inventory control
- Ordering and inventorizing of drugs and other valuable surgical items.
- Maintaining adequate supplies
- Accounts for gauze swabs, gauze towels and needles after each case.
- Maintain proper documentation and statistics
- Care of specimen and reports
- Good relationship within all the staff
- Preparation of duty list for nurses and minor staff.

- Responsible for infection control
- Directing, guiding and coordination of subordinate
- Inservice and orientation programme for new nurses, student nurses and minor staff.
- Preparation of annual indents.

Technical Staff

- Proper maintenance of theatre equipment.
- Helping the surgical team.

Minor Staff

- Responsible for cleaning
- Transportation of patients.
- Care of specimen and reports.
- Helping the nursing staff when necessary

CHAPTER 6

DENTAL SERVICES

6.1 Introduction

Dental care is provided through the OPD and Specialist Dental Clinics of Tertiary Care Hospitals. Basic & advanced curative procedures related to oral and Dental diseases are provided in Base, General & Teaching Hospitals. Indoor care is also available for complicated cases.

6.2 OBJECTIVE

To provide total Dental care,(Preventive and curative) to the public who call for treatment and are referred from other Institutions.

6.3 LOCATION

Dental clinics are sited in the O. P. Ds of secondary and tertiary care hospitals and are separated into Dental O. P. D. clinics & Consultant Clinics.

6.4 STAFF

The maximum cadre of Dental Surgeons for the OPD Clinic of a Base Hospital is two and for a Provincial / Teaching Hospital is four. In addition a relief Dental surgeon may be based in these hospitals to cover the area/district. The senior Dental Surgeon should be designated Officer in-charge and be responsible

for the smooth and efficient functioning of the clinic. His duties are listed in Circular 4075 of 15.03.94 (MAE /5/92)

A Specialist Clinic will also be situated in these Hospitals and they will be conducted by a Consultant Dental and Maxillo Facial Surgeon. He will be assisted by a SHO and a House Officer.

The support staff in a dental clinic should be either a Nursing Officer or Attendant or Labourer who is trained on the Job. General circular 1757 of 23.09.81 states that this person would remain in the clinic for a minimum period of 2 years. The support staff should be appointed at the rate of one per functional chair and unit. The Consultant should have a Nursing Officer to assist him.

6.5 EQUIPMENT

Each Dental Surgeon should have a functional Chair and Unit to work on. The Dental Surgeon will be responsible for the maintenance and care of Dental equipment. Primary maintenance care of the Dental equipment must be carried out by the Dental Surgeon. Major repairs to be reported to the B.E.S.

New equipment required for the clinic should be indented through the Director/Deputy Provincial Director or the correct line of command. The Dental Surgeon in charge should advice the Director of any equipment deficiencies in the clinic and follow up matters until the equipment is ordered brought to the clinic. Guidelines for ordering equipment appear in General Circular 1726 of 16.01.91. (MF/4/911). No equipment is available Ex-stock.

6.6 DUTIES

The Dental Surgeons come under the direct supervision of the Head of the Institution and overall supervision of the Regional Dental Surgeon. The duty list of a Dental Surgron is in para 7.15.

The Dental Surgeon will be on call to treat emergency cases at all times.

A Dental Surgeon should work full time i. e. 8.00 a. m. to 12 noon & 2.00 p. m. to 4 p. m. which means that each officer must have a Dental Chair and Unit. The Director must be informed about the movements of the Dental Surgeon during duty hours.

6.7 LEAVE

Leave taken by the Dental Surgeon has to be approved by the Director in advance. Relief arrangements should be made prior to availing of leave . Two Officers should not be given leave or short leave at the same time.
Work on public holidays should be approved only if there is a sufficient work-load. A minimum of 15 appointments for conservation should be given for a morning session of a public Holiday.

6.8 TREATMENT

The Dental Surgeon should provide treatment on demand as well as comprehensive care to the patients. All patients attending the clinic should be seen by the Dental Surgeon although a fixed number of 40 extractions per day has been stipulated.Saturday mornings are exclusively for children. However this does not preclude adults being treated if time permits. No patients should be referred to the School Dental Therapists.

6. 9 RANGE OF SERVICES PROVIDED

6.9.1. Dental OPD

Extractions, Conservation (Fillings), Scaling & Polishings, Minor Oral Surgery (eg. removal of impacted teeth, incisions, apicoectomies), Root canal treatment.
Extractions and temporary fillings are generally done in the mornings. If the surgical work finishes before noon, the Officer must engage himself in Health Education activities in the OPD and wards of the Hospital.

Appointments for conservation are given for the afternoons. A minimum of 10 appointments should be given per Dental Surgeon and the waiting list should not exceed two weeks.

If there are no patients in the clinic, the Dental Surgeon should keep himself gainfully occupied by getting patient from the wards and providing them with comprehensive treatment. Comprehensive treatment is providing complete, full mouth dental care to a patient.

6.9.2. CONSULTANT CLINICS

The Consultant D/S is in charge of the clinical aspects of the entire Dental Unit. He will attend to all complications, major oral surgery and any other operative procedure that cannot be undertaken by the Grade Dental Surgeons. he will operate on 2 days of the week at a minimum and as and when casualty lists occur. He should be given adequate ward and other facilities as other surgeons in the Hospital. He should be available for emergencies at all times of the day.

6.10 SERVICE PROCEDURES

Persons attending the clinic for Consultations or Treatment are required to obtain a number in the mornings. Urgent procedures such as extractions and deep fillings are attended to in the mornings and appointments for conservation given for the afternoons. However this does not preclude an extraction being performed in the afternoons. The Dental Surgeon must be available to provide treatment of any kind during his duty hours.

The hours of work must be displayed very prominently outside the clinic for the information of the public. (General Circular 1122 of 10th September 1980)

6.11 QUALITY OF CARE

1. Patient Care : Education and motivation to better Dental Health must be incorporated into the treatment regime. Quality of care in each and every treatment procedure should be emphasised. The patients should be educated and informed of the needs for treatment. The Dental Surgeons should not be satisfied by providing only the treatment on demand.

2. Instrument Care : Instruments must be carefully maintained and properly sterillized in accordance with State regulations. Extreme caution must be given to the proper sterilising of Dental Instruments. The Dental Surgeons should supervise the sterilising procedure and maintain absolute cleanliness in the clinic.

3. Environmental Care : The environment of the Dental clinic should be conducive to clean and desirable treatment.

6.12 RECORD KEEPING

1. TREATMENT CARD

The patient's history, a charting of the mouth and the treatment given is recorded on this and filed for future reference. This is maintained by the Dental Surgeon.

2. PATIENTS' REGISTER

The Number, Name and Treatment given to a patient is systematically recorded in this book.

3. MONTHLY RECORD SHEET H 1201

Daily entries should be made in Form H 1201 in Triplicate. An Instruction Manual has been developed to assist Officers to the Medical Statistician & Regional Dental Surgeon, before the 5th of the following month. The third copy is to be retained in the clinic. These orders came into effect with General Circular 1735 of 24.12.91 (MAE/57/91)

6.13 QUARTERS

Dental Surgeons are entitled to Government quarters after the needs of the Medical Officers on call have been met (Circular Letter 1341 of 07.06.1979).

6.14 DUTIES OF DENTAL SURGEONS APPOINTED TO GOVERNMENT HOSPITALS

Dental Surgeons work under the Administrative control of the M. O. I. C. of the Medical Institution.

Duty Hours : Week days and Saturdays
Morning : 08.00 a.m. - 12.00 Noon
Afternoon : 02.00 p.m. - 04.00 p.m.
Sundays : 08.00 a.m. - 10.30 a.m.
Public Holidays -
08.00-a.m. -12.00 Noon
(if necessary to be decided with the Head of the Institution).

- A notice indicating the Duty Hours should be prominently displayed for the information of the public.
- Outside normal hours of duty, he shall be on call to attend to emergency cases, day and night.

- He shall practise all aspects of Dental Surgery.

- A Diary - H. 136 in which the time of arrival and departure is written daily should be maintained. It should be submitted to the M. O. I. C. weekly. A similar Diary should be maintained at Visiting Stations.

- He should maintain a record of the work done in a Register set apart for the purpose. Morning and afternoon work should be shown seperately.

- The A. M. P. / Pharmacist or whoever is responsible for the surgical stores, shall order, receive, maintain and supply adequate stocks of dental materials, drugs and equipment for the Dental Clinic, under the supervision of the Dental Surgeon in-charge of the Dental Clinic. Once they are issued to the Dental Clinic, the Dental Surgeon in-charge shall be responsible for them and shall see that they are maintained in a satisfactory condition.

- The Dental Surgeon shall issue Medical Certificates in the field of dentistry whenever necessary according to the Rules laid down on the issue of Medical Certificates.

CHAPTER 7

THE PREMATURE BABY UNIT

The Premature Baby Unit

Secondry and Tertiary care hospitals should have a premature baby unit (P.B.U.) within easy access to the labour room and the Operating Theatre.

The following are normally admitted to the P.B.U. to reduce Neo Natal Mortality and Morbidity.

a) Low Birth Weight Babies i.e. New Borns below 2500 gram i.e. Pre term babies - Born before the end of 37 weeks. Small for dates babies.

b) Babies born to high risk pregnancy mother eg. P.E.T., Diabetic, Rh negative.

c) Babies below Apgar 5

d) Babies with major congenital deformities.

e) Babies with liquor stained meconium at birth.

f) Ill babies

g) Babies with birth injuries

h) Babies with respiratory difficulty.

STAFF NORMS

a) Paediatrician

b) Paediactric S. H.O. - H. O. according to bed strength and needs.

c) Sister-in-charge

d) Nurses according to bed strength (05 nurses to 01 Bed)

e) Female Attendants

f) Female Labourers

g) Sanitary Labourers

h) Ordinary Labourers

The staff who work in this unit is responsible for the maintenance of the highest test standards of medical and nursing care necessary for survival and well being of the new born infants.

Nursing Personnel and their duties

Sister or Senior Nurse in charge

a) Assigning duties to nursing staff

b) Taking measures to ennsure that the quality of nursing care remains high by being the leader of a dedicated team.

c) Planning of daily routine and emergency care procedures and making the staff aware of same by providing written instructions and supervision of all procedures.

d) Organizing staff conference and inservice education programmes.

e) Review of Policies and Procedures and updating them with the cooperation of the medical staff.

f) To prepare programme to regularly check staff to eliminate cross infection in the unit.

g) Maintain all necessary records.

In organizing a PBU the following areas should be identified.

1. Main P. B. care ward. Sufficient space is required to prevent overcrowding and to allow free movement of staff and equipment including x-ray machine and circulators.

The ward should be divided into :-

1. Sick baby area / room

2. Well baby area / room

The well baby area could again be divided

a) To accomodate very premature babies who need incubators / Ventilators.

b) To accomodate others who need only Cots.

2. Changing area

3. Scrub area

4. Stores

5. Soiled utensils and linen area.

Care should be taken to prevent contamination from other areas of the hospitals.

The nursery should be well lit for easy spotting of jaundice and cyanosis.

Walls and Ceiling should be of a light colour and should be washable.

Plate glass windows will help the nursing staff to observe the patients.

The humidity of the nursery should be between 55% and 65% and the temperature between 77% and 90%.

The folowing precautions should be adopted to maintain asepsis.

a) No one should be allowed to enter the PBU except those assigned to it.

b) Minimal handling prevents infection. Thus nursing care should be planned around feeding time.

c) All procedures should be carried out aseptically. Facilities must be avail able for easy hand washing, easy access to sterile item and proper disposal of soiled item.

The PBU must be regularly cleaned. Walls, ceilings fans and windows must be regularly cleaned or washed.

Furniture, shelves and equipment must be wiped daily with a damp cloth and using a disinfectant solution at least once a week.

Curtains and screens must be changed frequently.
Oxygen Cylinders should be carbolized before use.

Prophylactic Maintenance of Equipment.

a) All equipment should be disinfected before use. The manufacturers instructions should be followed carefully.

b) All incubators/ cots must be disinfected once a week and after each infant

c) Thermometre jars, Cotton ball jars, lifting forceps and receptacles should be sterilized by autoclaving.

d) Neutralizers aid tubing, humidifying bottles and tubing should be disinfected every night and between use.

- The manufacturer's instructions must be followed carefully as to which ventilators should be open and which should be closed. This is especially important when giving oxygen.
- When performing a procedure, other means to keep the infant warm and to provide oxygen must be used (i.e. by using a heat lamp and giving oxygen by mask).
- Procedures and treatments must be planned to be done at one time to avoid constant opening of the incubator.
- Careful monitoring of the temperature of the infant must be maintained at all times, to prevent a sub - normal drop in temperature or overheating.

The following records should be maintained.

a.) Weight - on admission and every 3rd day.

b.) Temperature

c.) Urine - Character and amount

d.) Stools - Frequency Consistency

e.) Oedema of face, abdomen, legs

f.) Colour cyanosis, Jaundice etc.

g.) Respiration

h.) Apnoea attacks

i.) Feeding, Intake volume etc.

j.) Treatment

h.) Lab Reports

l.) Abnormal Signs

Duties of the Nurse

1. To ensure that the vital functions of the body like respiration, and temperature are maintained.
2. To ensure proper and adequate feeding.
3. To prevent infection to ensure that asepsis is maintained eg. proper hand washing, use of sterile gowns, correct disposal of soiled articles, controlled movement of staff and visitors etc.
4. Proper identification of the baby on admission, transfer or discharge.
5. To obtain the consent of the mother or guardian for surgery before being sent to the O.T. or transfer to another institution.
6. To carry out treatment as instructed by the medical staff.
7. To take over and hand over at the start and end of the duty shift.

Prevention of Contamination

Infection is a dangerous and common complication and is preventable. Infection is spread from baby to baby, from the hands and clothing of the staff, from contaminated equipment and improper prevention of feeds.

Using correct procedures and proper handling of the baby by the nursing staff could prevent an appreciable amount of infection. Strict aseptic techniques are required during the administration of parenteral fluids, medication, surgical procedures and feeding.

The environment of the PBU must be kept hygienicaly clean.

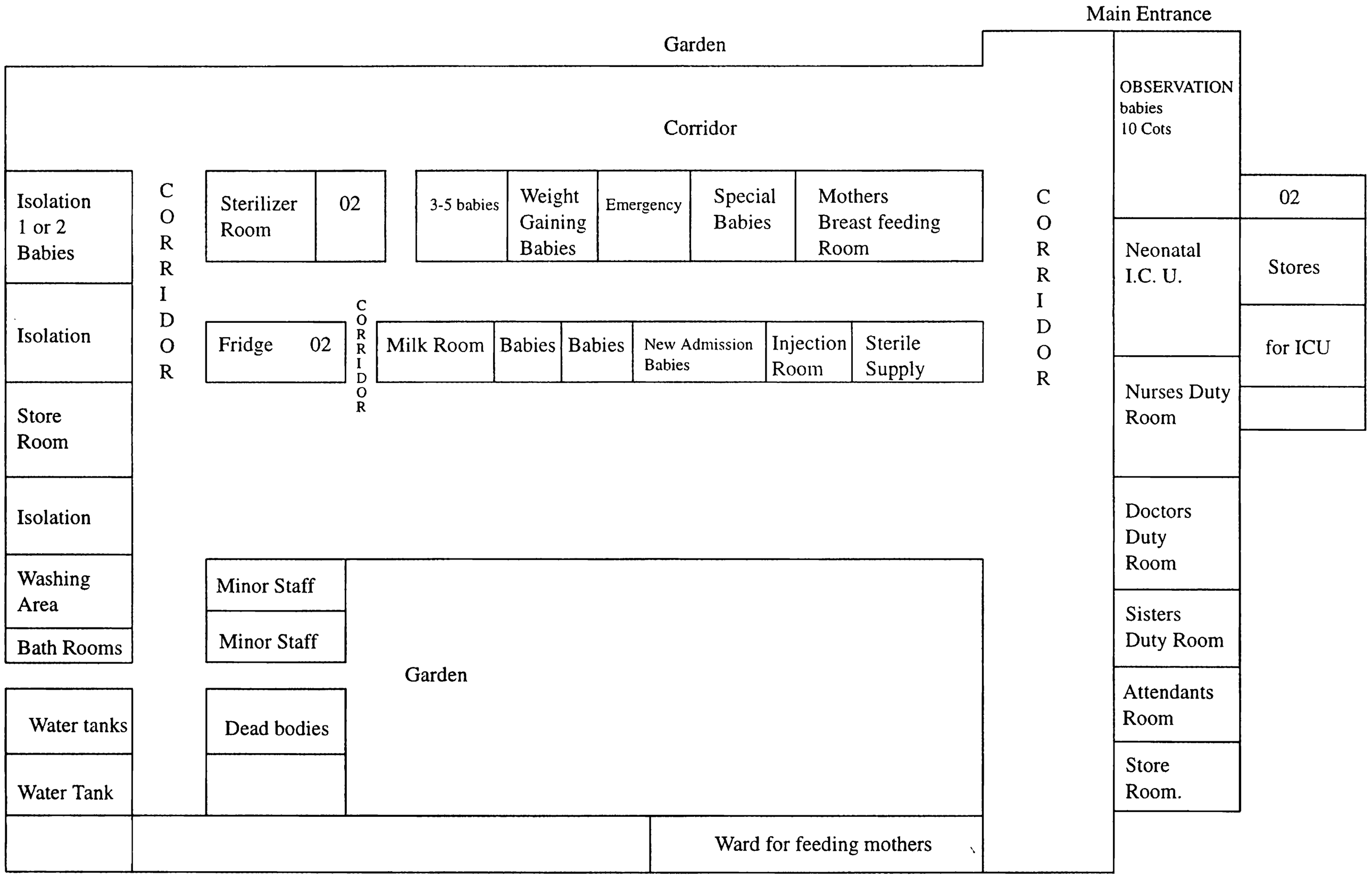
Management of Incubators

Incubators will provide the maximum benefit if properly handled and maintained. Incubators must be disinfected once a week and after each use. The alarm system must be checked daily and before use.

Information Desk

An information desk staffed by a nurse or a mid wife should be sited in a prominent place at the entrance to the PBU.

PLAN FOR P. B. U.


Main Entrance
Garden
Corridor
OBSERVATION babies 10 Cots
02
Neonatal I.C. U.
Stores
for ICU
Nurses Duty Room
Doctors Duty Room
Sisters Duty Room
Attendants Room
Store Room.
CORRIDOR
Isolation 1 or 2 Babies
Isolation
Store Room
Isolation
Washing Area
Bath Rooms
Sterilizer Room
02
3-5 babies
Weight Gaining Babies
Emergency
Special Babies
Mothers Breast feeding Room
Fridge 02
CORRIDOR
Milk Room
Babies
Babies
New Admission Babies
Injection Room
Sterile Supply
Minor Staff
Minor Staff
Garden
Water tanks
Water Tank
Dead bodies
Ward for feeding mothers

CHAPTER 8

MANAGEMENT OF INTENSIVE CARE UNITS

AIM

The aim is to centralise and optimise equipment, staffing and facilities for the care of critically ill patients who require high tech monitoring and modulation of vital organ function and life support. The immediate objective is to preserve life and prevent reverse or minimise damage to vital organs, by optimising oxygen delivery to tissues until the underlying disease resolves. Although expensive, the cost-benefit is high as I.C.U.s concentrate technology and staff in one place eliminating the need for duplication in all wards and hospitals. Also, males and femals, adults and children may be managed together in one unit.

PHILOSOPHY : "HI-TECH & HIGH-TOUCH"

There is increasing concern that technological advancement has caused a reduction in "patient contact" compassion, and care. Physicians should temper therapeutic zeal with attention to humanitarian principles and remember to treat the whole patient rather than normalising values. Monitoring is never an end in itself and clinical examination should remain the first line of diagnosis. The one-to-one CARE is the key factor in improving outcomes.

ORGANISATION

The setting up of I.C.U.s should be with due consideration to cost-benefit and risk benifit ratios. Every hospital does not need an I. C. U. and Regional Units are best

for Sri Lanka. To avoid units being set up haphazardly, requests for new units should be supported by numbers of patients who were transferred or died due to the lack of an I.C.U.

Intensive Care Units with hi-tech monitoring and multi-organ life support are mandatory in all teaching and provincial hospitals.

High Dependancy Units are strongly advocated for Base Hospitals, with facilities for adequate monitoring and short term life support such as ventilation for 48 hours. patients needing long term critical care should be transferred to a Regional ICU.

AMBULANCE TRANSPORT

The very sick can be moved safely over long distances if properly prepared and accompanied by trained personnel in ambulances with portable equipment for monitoring and resuscitation.

DESIGN

The I. C. U. should be away from general traffic, sited close to the operating theatre, C.S.S.D. and radiology department, freely accessible, with large doors and corridors and a glass window to view the outside world.
All surfaces should be easy to clean.
Air conditioning to 24 degrees C with "natural day light"

BEDS

The optimum is 4-8 beds, or 1% of acute beds in the hospital. One bed should be for emergency admission, cardiac arrest etc. One isolation cubicle for infective or immunocompromised patients.

Each bed should have a minimum space of 18 sqm, 8 electric sockets (one 15 amp), piped oxygen, air suction and wash basin.

ROOMS

Medical Officer's Room, Nurses' Room, Store Room, Clean Utility Room, Dirty Utility Room with direct access to exterior.
Two Toilets & Bed pan washing area.
Ideally, Relatives waiting room, Office Library & Laboratory.

STAFFING

All staff should be highly motivated and preferably self-selected.

CONSULTANT

Duties :

* Administration & policy implementation.
* Continuity of patient care, liaison & communication.
* Teaching, supervision, and maintenance of staff morale.
* Procuring & maintenance of equipment. * Audit, and establishment of policy & protocols.

Anaesthetists are ideally suited due to their expertise in emergency care and technical skills, and habitual daily practice of directing their total attention on patients in a critical state, unconscious and paralysed, needing continuous monitoring and modulation in the presence of stress, pain and haemorrhage.

However, clinical responsibility should be shared with other specialists and terms of reference well defined with joint ward rounds to maintain good relationships and communication.

MEDICAL OFFICERS

4 per unit, physically present throughout the day, each rostered for not more than 12 hours at a stretch. Plan of management and controversial therapy should be meticulously discussed at the bedside when changing shifts.

NURSING STAFF

Sister in charge, and one nurse per patient on all shifts.
Nurses play a major role and should be self selected, motivated and well trained. Treatment goals should be discussed with them.

DUTIES

Assisting medical officers.
Observation and clinical assessment of patients.
Charting of vital signs and electronic monitoring.
Maintenance of registers of admissions, discharges, deaths, etc.
Maintenance of charts : fluid balance, drug therapy, etc. Special nursing care of unconscious and critically ill patients.
Sterilisation and Infection control.
Major resuscitative procedures : CPR, IV access, 02 therapy, etc. Communication with and emotional support of patient and relatives.

PHYSIOTHERAPIST

Physiotherapy is required several times a day during which preoxygenation and pain relief must be ensured.

DOMESTIC STAFF

Should also be motivated to work as part of the team.

MONITORING

Routine : Pluse, B. P. Respiration, Urine, Temperature, ECG.
When necessary : Blood chemistry, renal, liver functions, etc.
When indicated : Invasive monitoring, radiology, special tests. Consider patient safety, cost-benefit & legal liability.
Repeated, as absolute values are less important than trends.

EQUIPMENT

Simple, robust, reliable, cheap, standardised. Wall mounted. Regular servicing, maintenance and calibration are essential.

Equipment per Unit :
Defibrillator (ideally 2), Nebuliser, Glucometer, Wright's Respirometer and Spot lamp.

Equipment per Bed : E. C. G. monitor, Oxygen Analyser, Pulse Oximeter & Capnometer, Electronic thermometery, Sphygmomanometer, Suction, Syringe Pump, Ventilator & Humidifier.

Special Equipment in Regional I. C. U. : Blood gas and serum electrolyte analyser with good maintenance service.

LABORATORY FACILITIES

24 hours lab. facilities essential for urgent investigations

ADMISSION & DISCHARGE POLICY

The policy and protocal regarding admissions and discharges should be clearly defined and displayed in the Unit.

The Consultant in Charge is responsible for all decisions regarding admissions and discharges, and should always be contacted before a critically ill patient is refused admission.

Disputes may be avoided by adhering to strict policy.

* Elective admissions : eg. after major surgery The request should be made in writing as early as possible in a register maintained in the unit.

* Urgent admissions : eg . acute system failure
  Consultant to Consultant discussion is essential before admission.

* Emergency admission : eg . eclampsia
  Although ideally a bed should be reserved for emergency admission, rushing a critically ill patient to the unit without warning is discouraged. Life saving measures should first be initiated wherever possible, and the Consultants informed immediately.

* Transferred patients : Patients may be transferred direct to the Unit from other institutions but only after prior consulation.

* Chronological age or malignancy alone is no barrier, but it is important to define exact therapeutic goals and predict outcomes.

* No patient who is critically ill should be discharged to make room for another.

ADMISSION CRITERIA

* Critically ill, and at high risk of dying from a potentially reversible cause with a high chance of recovery.
  eg. Guillen Barre syndrome, Poisoning.
* For vital system support. eg. Respiratory or Renal failure.
* At risk of lethal complications. eg. Eclampsia.
* Needing continuous monitoring and supervision.
  eg. heart disease.
* For specialised techniques eg. Dialysis.
* For specialised nursing eg. complicated tracheostomy, coma.

EXCLUSION CRITERIA

* Unkind, to cause prolongation of death, (as opposed to life).
* Unsafe, due to high risk of nosocomial infections.
* Unnecessary, when routine ward care is adequate.
* Unsuccessful outcomes in irreversible illnesses.
* Unwise to admit the terminally ill.
* Uneconomical, wrongful diversion of limited resources.

COMMON CATEGORIES OF PATIENTS ADMITTED TO I. C. U.

* Post CPR, Trauma, Shock, Haemorrhage, Septicaemia.
* Post-operative monitoring, pain relief, & fluid balance
* Respiratory, Cardio - vascular, Renal & Hepatic failure
* Ventilatory Failure : Polyneuritis, Tetanus, Poisoning.
* Obstetrics : Eclampsia & Haemorrhage.
* Paediatrics : Croup, Epiglottitis, Bronchiolitis, Asthma.
* Endocrine disorders : Diabetes, etc.

MULTIPLE TRAUMA DISASTER TRIAGE PRIORITIZATION.

1. Life threatening but saveable.
2. Serious injury but stable.
3. Non- walking wounded.
4. Walking wounded.
5. Life - threatening, unsaveable.
6. Dead.

HAZARDS OF ICU

* Invasive therapy
* Equipment failure
* Noso-comial infections
* Drug complications
* Psychological stress
* Reduced immunocompetence.
* Deep venous thrombosis.

REDUCTION OF PSYCHOLOGICAL STRESS

* Maintain diurnal rhythm by reducing lights, feeding, noise and disturbance at night.
* Sedation and pain relief for paralysed, ventilated patients.
* Elevate mood by encouraging visitors, mirror, reading matter.
* Ensure communication with bell pencil, paper.
* Ensure orientation with calender, clock, conversation.
* Prevent peptic ulcers with antacids and enteral feeding.

STRESS ULCER PROPHYLAXSIS

20% ICU patients develop ulcers, and 5% have severe bleeding. As stress ulcers appear almost immediately due to mucosal ischaemia in a critical illness, therapy, is to prevent bleeding.

1. Enterel feeding is the best protection.
   Test feed 50-100ml over 30 min. via 20FG N-G tube.
   If less than half is retained after 30min. feed enterally.
   If intubated add methylene blue to check for aspiration.

2. Sucralfate if gastric emptying is inadequate.
   1g in 15ml water tds.

3. H2 blockers & antacids if gastric emptying is absent.
   Ranitidine 0.5 mg / kg & cimetidine 300mg slow IV & infusion.
   (Disadvantage : Removes acid defence against bacteria.)

4. Avoid NSAIDS, steroids, chemotherapy.

PREVENTION OF NOSOCOMIAL INFECTIONS

Room ventilation with good air flow pattern.
Visitors should remove street shoes and wear overcoat.
Mopping floor thrice a day & washing walls weekly.
Hand washing and drying before & after each patient contact.
In high risk cases, wash with ethanol.
Disposable gloves caps, masks, gowns, for aseptic procedures. Culture of sputum, urine, catheter tip, etc. twice a week daily inspection of puncture sites.
Avoid canulae in lower limbs. Iodine anti-septic for cannulae.
Change infusion sets & peripheral lines every 48 hours, and arterial cannulae every 96 hours.
Change tracheal tubes weekly.
Tracheostomy preferable for long term ventilation.
Use of 1 ventilator / patient & change of tubing after 48 hours.
Use of bacterial filters & disposable equipment.
All contaminated dressings should be changed immediately.
Isolation plastic aprons & barrier nursing for infected patients.

ANTIBIOTIC THERAPY

Strict antibiotic policy is important as prophylactic antibiotics for over 24 hours encourage resistant strains and is wasteful.
Common Gram - ves & aerobes and few anaerobes : Cephalosporins Anaerobes : Metronidazole.

PROTOCOL FOR ADVANCED CARDIO-PULMONARY-CEREBRAL RESUSCITATION

(NEW GUIDELINES)

Rapid defibrillation is the major determinant of survival.

* Shock 200J/ Shock 300J/ Shock 360J one after the other.
* Adrenaline 1mg (1:10, 000, 10ml IV or 20ml via ETT)
* Shock 360J
* Lignocaine 100mg IV or 200mg via ETT
* Shock 360J again & repeat sequence
* Atropine 1mg IV or 2mg via ETT repeated, for sinus bradycardia

For IV injections central lines are preferable.

If peripheral line, follow up with 20ml Saline & elevate limb.

Catheter passed beyond tip of tracheal tube is an effective route for adrenaline, atropine and lignocaine in 10ml N. Saline.

stop chest compressions while spraying the drug down the catheter and give several quick insufflations to aerosolize.

* Sodium bicarbonate is detrimental except in.
  pre-existing severe metabolic acidosis or hyperkalaemia Tricyclic or phenobar bital overdose.
  Protracted arrest with severe acidosis pH < 7

* Calcium is detrimental except in :
  Calcium channel blocker toxicity
  Hypocalcaemia or hyperkalaemia
  Electro-mechanical dissociation

Arrhythmias	Verapamil 2.5mg IV/2 mins.
Refractory VF/VT	Bretylium Magnesium.
Cerebral oedema	Dexamethasone, mannitol, frusemide, IPPV.

DIAGNOSIS OF BRAIN DEATH

Brain Death is the complete and irreversible cessation of all brain functions including the cerebrum and brain stem.

The diagnosis is necessary for the following reasons :

* Intensivists can withdraw extraordinary means of life support.
* Patients can be spared a protracted death.
* Relatives can be relieved of stress, false, hopes and expense.
* Public funds and I. C. U. resources can be made available to others.
* Transplant organs can be made available in good condition.

As diagnosis of Brain Death is new in Sri Lanka it must be appreciated that it would cause severe distress to relations. A sympathetic doctor should take time to explain the process, and support them through the emotional crisis.

Diagnosis must confirm :

* Apnoea
* Areflexia
* Absent cerebral blood flow.

DIFFERENCIATING BRAIN STEM DEATH & CORTICAL DEATH

In Brain stem Death, all brain stem reflexes and respiration are absent and asystole usually occurs within a week, which allowed physians in the past to "ventilate to asystole"
In Cortical Death, brain stem reflexes and respiration are present, and the patient may live in a vegetative state for years.

PRECONDITIONS FOR DIAGNOSING BRAIN DEATH

1. COMA

The patient must be in a deep coma where the probable cause is known and the following causes are excluded :

* Drugs or toxins, (toxicology screen or wait 3 days)
* Hypothermia (33 degrees)
* Severe hypotension * Severe hypo or hyperglycaemia.
* Metabolic endocrine, acid base or electrolyte imbalance.

2. VENTILATOR DEPENDANCE

Exclude respiratory depressant drugs and relaxants.

TIME OF TEST

* Pre-conditions must be fulfilled.
* 4-8 hours after head injury.
* 1-2 days after a hypoxic episode.
* 3-4 days after drug intoxication.

REPEAT TEST IN 3-24 HOURS.

MEDICAL OFFICER PERFORMING TEST

Consultant in charge or Assistant 5 years after registration.
Consultant neurologist only if primary diagnosis is in doubt.

TESTS TO CONFIRM BRAIN STEM DEATH

1. Absence of response to deep pain
2. Absence of pupillary reaction to light (right & left)
3. Absence of corneal reflex (use firm pressure)
4. Absence of vestibulo-ocular reflex (no eye movement during or after slow injection of 20ml ice cold water into each ear.)
5. Absence of occulo-cephalic reflex (doll's head movement)
6. Absence of gag reflex (suction tube down trachea)
7. Absence of tachycardia after atropine 1mg IV
8. Apnoea test.

APNOEA TEST

Ventilate with 100% O_2 for 10 min. to maintain PO_2 above 100mm.
Ventilate with 5% co 2 in O_2 for 5 min. to obtain PCO_2 of 40 mm.
Disconnect ventilator for 10min. to obtain PCO_2 of 70mm.
Administer 6L O_2 through catheter in ETT throughout.
Watch for the slightest sign of respiration.

* If respiration is PRESENT, the patient is not brain dead, RECONNECT to ventilator.
* If respiration is ABSENT, but $PO_2 < 60$, or arrhythmias occur, RECONNECT to ventilator and repeat with better oxygenation.
* If respiration is ABSENT, and no transplant is planned, DIAGNOSE braindeath, inform relatives, and RECONNECT to ventilator for organ preservation.
* If respiration is ABSENT, and no transplant is planned DISCONNECT ventilator.

PITFALLS & SAFEGAURDS

* Always test each side separately
* Look for cataracts, ear wax, neurological disease
* Remember there may be more than one cause for the coma eg. drug overdose and injury.
* Spinal reflex movements are compatible with brain stem death
* Decerebrate rigidity is incompatible with brain stem death
* Seizures are incompatible with brain stem death

CARDIOGENIC SHOCK

Consultant Physician to be in charge.

Oxygenation	31/min 02 via face mask or nasal prongs
Pain relief	Morphine IV. Entonox.
Anti-Thrombotic	Aspirin 150mg oral stat
	Streptokinase within 6 hours
Coronary dilators	GTN, Isosorbide dinitrate Nitroderm
Ventricular Tachy	Lignocaine 100mg IV & 1-4mg/hour Synchronized DC Shock.
Supra Vent. Tachy.	DC shock Verapamil 5-10mg., Digitalization.
Sinus Bradycardia	Atropine & Isoprenaline
Heart Failure	Decrease venous pressure to prevent oedema. Increase forward flow for optimum oxygenation. CVP & Fluid challenge. Inodilators & vasodilators. Frusemide, Opiates, Inotropes, Anti-arrhythmics. IPPV and PEEP.

RESPIRATORY FAILURE

CLINICAL EXAMINATION

Rate, pattern, tidal volume, dyssynchrony, accessory muscles. Tachypnoea is often the earliest sign.

Upper airway obstruction	: nasal flaring, stridor, no air flow,
Inspiratory stridor	: extrathoracic obstruction
Expiratory stridor	: intrathoracic obstruction
Wheezing	: proximal or peripheral airways narrowing
Rales	: cardiac or respiratory dysfunction
MONITORING	: SPO_2, Tidal Volume, Peak Flow, X-ray, Blood gases.

OXYGEN DELIVERY SYSTEMS

TYPE	FLOW L/MIN	FIO2	COMMENT
Nasal canula	2	0.25	Comfortable
	3	0.3	Ideal if MV is normal
	4	0.35	High MV air dilutes 02
	5	0.4	High MV air dilutes 02
Simple mask	8-15	0.4 - 0.6	
Venturi mask	4-12	0.28 - 0.5	No change with MV

INDICATIONS FOR VENTILATION

When in doubt - Ventilate! Get control of airway & ventilation.

Mode	Assist/ Control/ Itermittent Mandatory Ventilation
Volume	10ml/ Kg
Rate	12/min. (adults)
F IO2	Minimum required to maintain Sp02 > 90%
	Needs 20 min to reach new steady state.

Monitor Peak Airway Pressure

Increased Peak Pressure :

1. Increased Airway Resistance : obstruction, secretions, spasm.
2. Decreased Compliance : Pneumothorax, atalectasis, Pulmonary oedema, chest constructions, intra-abdominal pressure.

Decreased Peak Pressure :

1. Air leak in tubes or cuff or disconnection.
2. Hyperventilation with patient's efforts.

INDICATIONS FOR TRACHEAL SUCTION :

* Audible or visible secretions
* Increase of peak inspiratory pressure
* Removal of mucous plug, F.B. etc.
* Check ETT for kinks, obstruction, herniation.
* Avoid acute hypoxia during suction
* Catheter must always be less than half the diameter of tube.

ACUTE RESPIRATORY FAILURE - ARDS

Goals :

1. Improve airflow
2. Maintain tissue oxygenation $SPO_2 > 90\%$
   Dobutamine 5 - 15 mcg/ kg/ min
   (Dopamine may increase PCWP & vasodilators increase shunt)
   (Steroids predispose to infection & increased blood viscosity)
3. Avoid O_2 toxicity
   If FIO_2 0.6 does not maintain SPO > 90%, apply PEEP

ACUTE RESPIRATORY FAILURE (Pneumonary oedema, COAD)

Goals :

1. Improve airflow
   Bronchodilators & steroids valuable in asthmatics
   Aminophyline maybe risky and benefits are unproven.

2. Improve balance between gas exchange and metabolism
   Relaxants, sedation, hypnotics.
   Diazepam : cumulative and causes phlebitis.
   Midazolam : quicker, shorter acting.

Auscultatory sounds do not correlate with airway obstruction.
Airflow sounds in ventilator tubing may cause interference.
PEER best indicator with spontaneous ventilation.
PIFR best with IPPV.

ANAPHYLACTIC SHOCK

Clinical diagnosis : Sudden severe CVS collapse due to vasodilatation and increased capillary permeability often with accompanying laryngeal oedema, bronchospasm & angio-oedema.

Treatment : Adrenaline 5ml 1:10,000 IV.
Colloid infusions.
Oxygen.
Aminophyline, hydrocortisone & diphenhydramine.

HYPOVOLAEMIC SHOCK

Goal : Maximise O_2 delivery & blood volume : 02, Fluids, Inotropes.
Aim for Hct of 30-35%, Hb of 8-9g/d1 and albumin of 2.5g/d1.

Maintain colloid oncotic pressure : 1 colloid for 3 crystalloids
Fluid challenge of 200ml crystalloid in 10 minites & assess CVP and urine output trends.

Fluid therapy :
Estimated loss x blood volume (males 70ml & females 60ml/kg)

Clinical signs	Loss
Orthostatic tachycardia 20/min	15%
Orthostatic hypotension 15 mm	20%
Supine hypotension & oliguria	30%
Organ failure	40%

N. B.

* Tachycardia maybe blunted and hypotension exaggerated by old age, diabetes, drugs etc.
* Volume loading gives better oxygen delivery than packed cells.
* In mild hypovolaemia, infuse crystalloids to replace the e. c. f. Give thrice the volume deficit as only 30% remains intravascular.
* In severe hypovolaemia, infuse equal volume of colloids.
* In severe shock group specific blood maybe transfused safely without D. T. Dilute packed cells with Saline for faster flow.
* Wide bore (14-16G) short peripheral catheters give best flows.
* Monitor hourly urine output & maintain at >0.5ml / kg/hr.

Drugs

Dopamine : 200mg in 5ml vial. 400 microgm / ml infusion
2-5 microgm / kg/min to increase urine output
5-15 microgm/kg/min for inotropic support
15-25 microgm/kg/min for vasoconstriction.

Dobutamine : "Pure" cardiac inotrope. Less tachycardia.
250 mg in 20ml. 1mg /ml infusion
2.5 -10 microgm/kg/min.

Adrenaline : 2-30 microgm /min

SEPTIC SHOCK

Remove infective focus	:	F. B. Catheters, grafts, pus,etc.
Maximise O_2 delivery		IPPV, Inotropes, Blood, Fluids.
Metabolic support		Glucose, Insulin, Electrolytes, TPN.
Renal support		Mannitol, Frusemide, Dopamine, Dialysis.
Correct coagulopathy		FFP, Plateletes, Cryo, Anti-thrombin.
Other therapy		Immunomodulators, Chlorpromazine, PSIs.

Clinical evalution :

Fever (if hypothermic, poor prognosis)

WBC usually increased (if decreased, poor prognosis)

Tachypnoea & tachycardia

Organ dysfunction (mental state ARDS, oliguria, jaundice)

Goal — To prevent multi-organ failure, not identify infection.
Improve haemodynamics and oxygenation to supranormal levels to match hypermetabolism of sepsis.

Therapy — Fluid loading with colloids.
Vasoconstrictors judiciously.
Dobutamine &dopamine.
Glucose (50% 1g/kg), Insulin (1.5u/kg) & KCI 10mm.
Eradicate infection.
Haemodialysis for renal failure although it is often part of the multi-organ failure leading to death.

ACUTE RENAL FAILURE (<400ML/24HRS)

PRE-RENAL — Urine Na < 20 mmol/1. Improve C. O.

RENAL — Treat cause, sepsis, toxins, drugs, etc.
Urine & plasma iso-osmolar. proteinuria.
Urine Na > 30-50 mmol 1/1 & K < 10mmo 1/1.

POST-RENAL Relieve obstruction

Management

* Check for catheter obstruction.
* Ensure adequate intravascular volume (CVP 12 mm)
* Fluid challenge : 100ml 20% mannitol (response in 2hr)
  Osmotic challenge : 100ml 20% mannitol (response in 2hr)
  Diuretic challenge : Frusemide 100ml 20% mannitol (response in 1hr)
* If BP is normal : Dobutamine 10-20 mugm/kg/hr.
  If BP is low : Dopamine 5-15 mugm /kg/hr.
  (Early therapy converts oliguric to non-oliguric failure)
* Omit all nephrotoxic drugs, renal excreted drugs & allergens.
  Replace aminoglycosides with aztreonam.
  cimetidine with sucralfate.
  frusemide with bumetamide.
  NSAIDS & penicillins with alternatives.
* Treat dangerous hyperkalemia with :
  Dextrose 50ml 50% & Soluble Insulin 10 units.
  NaHCO3, CaCl 10% 10ml, Dialysis

STRESS ULCER PROPHYLAXSIS

As stress ulcers appear almost immediately after critical illness due to mucosal ischaemia, therapy is to prevent bleeding.
(20% ICU patients develop ulcers, and 5% have severe bleeding)

1. Enterel feeding is the best protection.
   Test feed 50-100ml over 30 min. via 20FG N-G tube.
   If less than half is retrieved after 30min. feed enterally.
   If intubated, add methylene blue to check for aspiration.
2. Sucralfate, if gastric emptying is inadequate
   1g in 15ml water tds. (cheap & non toxic)
3. Antacids : Sodium citrate 30ml every 2 hours.
4. H_2 blockers if very poor emptying.
   Maintain PH of gastric fluid > 4.
   Ranitidine 50mg & cimetidine 300mg slow IV & infusion.
   (Disadvantage : Removes acid defense against bacteria & makes mucosa more sensitive to residual acid.)
5. avoid NSAIDS , Steroids, chemotherapy,

COMMON PROBLEMS

CPR, Trauma, Head injury, Shock, Septicaemia.
Post-operative monitoring, pain relief & fluid balance.
Respiratory, Cardio-vascular, Renal & Hepatic failure.
Prolonged ventilation : Polyneuritis, Tetanus, Poisoning.
Obstetrics : PET & PPH.
Paediatrics : Croup, Epiglottitis, Bronchiolitis,Asthma.
Diabetes, metabolic & endocrine disorders.

MANAGEMENT GUIDELINES

CARDIAC ARREST

ADVANCED CARDIO-PULMONARY-CEREBRAL RESUSCITATION

Rapid defibrillation is the major determinant of survival.

* Shock 200J / Shock 300J / Shock 360J
* Adrenaline 1mg (1:10,000, 10ml IV or 20ml via ETT)
  * Shock 360J
  * Lignocaine 100mg IV or 200mg via ETT.
  * Shock 360J again & repeat above sequence.
  * Atropine 1mg IV or 2mg via ETT repeated, for sinus bradycardia.

For IV injections central lines are preferable.
Peripheral line : Give 20ml N.Saline bolus & elevate limb.
Catheter passed beyond tip of ETT is an effective route for
Adrenaline, Atropine, Lignocaine diluted in 10ml N. Saline.
Stop chest compressions while spraying the drug down the catheter
and give several quick insufflations to aerosolize.

Sodium bicarbonate is contraindicated except in :

* Pre-existing severe metabolic acidosis or hyperkalaemia
* Tricyclic or phenobarbital overdose.
* Protracted arrest with severe acidosis pH < 7

Calcium is detrimental except in :

* Calcium channel blocker toxicity.
* Hypocalcaemia or hyperkalaemia

For Arrhythmias : Verapamil 2.5 mg IV/2 mins. Maximum 20mg.

Refractory VF/VT : Bretylium, Magnesium.

CARDIOGENIC SHOCK (Acute myocardial infarction & failure)

Oxygen via face mask / nasal prongs
Pain relief : Morphine IV. Entonox.
Anti-Thrombotic : Aspirin 150mg oral stat
Streptokinase within 6 hours
Coronary dilators : GTN, Isosorbide dinitrate, Nitroderm
V.T. : Lignocaine 100mg IV & 1-4mg /hour
Synchronized DC shock
S.V. T. : DC shock. Verapamil 5-10mg., Digitalization.
Bradycardia : Atropine & Isoprenaline

Heart Failure : Decrease venous pressure to prevent oedema.
Increase forward flow for optimum oxygenation.
CVP & Fluid challenge. Inodilators & vasodilators.
Frusemide, Opiates, Inotropes, Anti-arrhythmics.
IPPV and PEEP.

HYPOVOLAEMIC SHOCK

Goal : Maximise O_2 delivery & blood volume : O_2, Fluids, Inotropes.
Aim for Hct of 30-35%

Maintain colloid oncotic pressure : 1 colloid for 3 crystalloids Fluid challenge of 200ml crystalloid in 10 minutes & assess CVP and urine output trends.

Fluid therapy :

Estimated loss x blood volume (males 70ml females 60ml/kg)

Clinical signs	Loss
Orthostatic tachycardia 20/min	15%
Orthostatic hypotension 15mm	20%
Supine hypotension & oliguria	30%
Organ failure	40%

N.B.

* Tachycardia maybe blunted and hypotension exaggerated by old age, diabetes , etc.
* Volume loading gives better oxygen delivery than packed cells.
* In mild hypovolaemia , infuse crystalloids to replace the e.c.f. Give thrice the volume deficit as only 30% remains intravascular.
* In severe hypovolaemia, infuse equal volume of colloids.
* In severe shock group specific blood maybe transfused safely without D.T. Dilute packed cells with Saline for faster flow.
* Wide bore (14-16G) short peripheral catheters give best flows.
* Monitor hourly urine output & maintain at >0.5ml /kg/hr.

Drugs

Dopamine	200 mg in 5ml vital . 400 microgm/ml infusion 2-5 microgm/kg/min to increase urine output. 5-15 microgm/kg/min (beta 1&2) for inotropic support 15-25 microgm/kg/min (alpha) for vasoconstriction.
Dobutamine :	"Pure" cardiac inotrope. 250mg in 20ml . 1mg/ml infusion. 2.5-10 microgm/kg/min.
Adrenaline	2-30 microgm/min.

ANAPHYLACTIC SHOCK

Clinical diagnosis — Sudden severe CVS collapse due to vasodilatation and increased capillary permeability.

Laryngeal oedema, bronchospasam & angio-oedema.

Treatment : Adrenaline 5ml 1:10,000 IV & colloids.
Aminophyline, hydrocortisone & diphenhydramine may help.

SEPTIC SHOCK

Clinical diagnosis :

Fever (if hypothermic, poor prognosis)
WBC increased (if decreased, poor prognosis)
Tachypnoea & tachycardia
Organ dysfunction (mental state, ARDS, oliguria, jaundice)

Goal : To prevent multi - organ failure, not identify infection.
Improve haemodynamics to supranormal levels to match. hypermetabolism of sepsis.

Eradicate Infection — F.B. Catheters, grafts gut pus,
Maximise 02 delivery : IPPV Blood, Colloids, Inotropes.
Inotropic support — Dopamine & Dobutamine.
Metabolc syupport — Glucose (50% 1g/kg)
Insulin (1.5u/kg),
KCL 10mm,TPN.

Renal support : Mannitol, Frusemide, Dopamine.
Haemodialysis, for renal failure although it is part of the multi -organ failure leading to death.

Unresponsive hypotension : Vasonstrictors
Correct coagulation defects : FFP, Platelets, Cryo, Anti-thrombin.
Avoid stress ulceration — Ranitidine 50mg slow IV bd.
Sodium citrate 30ml/2hr
Sucralfate 1g in 15ml tds.

CHAPTER 9

PAYING WARDS MANAGEMENT

Some of the larger state hospitals in the island have a separate building or a secluded part of a building set apart for patients who can afford to pay for the services provided by the hospital.

Introduction

The payment will be according to the rates decided by the authority. They get better physical facilities than the non-paying patients in the same hospital and have the advantage of been able to select, the consultant of his or her own choice. These facilities may vary according to the class of the paying ward. These wards are classified as,

i. Super class eg. Merchants ward in colombo General Hospital,
   Villas as in Mental Hospital Angoda.
ii. Class I paying wards.
iii. Class II paying wards.

1 Super Class

These rooms have an extra bed for the visitor. Room could be larger and may be air conditioned.

11 Class 1

Separate rooms but with one bed for the patient; and with suitable furniture and attached toilets.

111 class 11

These paying wards have two or more patients in one room with common toilets.

Objectives

1. To provide better physical facilities for the patients who are willing to pay for them.

FURNITURE AND OTHER UTENSILS REQUIRED FOR ONE PATIENT GENERAL PRINCIPLES

The type and quality of the furniture and other necessary equipment depend on the class of paying ward. First class and special class paying wards should be given better quality furniture and utensils. Proper maintenance of furniture and other equipments is very important. Broken utensils and furniture should not be used.

Furniture used in a single accommodation room

01.	Bed iron large	01
	Small bed for a visitor if possible	
02.	Almirah	01
03.	Toilet Table	01
04.	Teapoy	01
05.	Screen Large	01
06.	Towel Racks	01
07.	Chair G. O. H.	01
08.	Chair Verandah	02
09.	Table ordinary	01
10.	Table small for meals	01
11.	Over bed tables	01
12.	Racks for suit cases	01
13.	Basket for waste papers	01
14.	Rug coir or Rubber	01
15.	Bed side lockers	01

Linen

01. Bed covers	01
02. Bed sheets large 90x72	02
03. Draw Sheets	01
04. Draw Mackintosh	01
05. Pillows	05
06. Pillow cases	05
07. Mattress	02
08. Covers for mattress	02
09. Teapoy covers	01
10. Table cloth	01
11. Toilet Runner	01
12. Towels Bath	01
13. Towels Face	01
14. Serviette	01
15. Mosquito Nets	02
16. Bath Mats	01

Crockery & Cutlery

01. Tea pot
02. Cups & Saucers
03. Trays serving
04. Food cover plastic
05. Cruet set
06. Tumbler glass
07. Container for drinking water
08. Table Spoon
09. Tea spoon
10. Table Knife
11. Butter Knife
12. Fork
13. Containers for sugar & Milk Powder
14. Cups - dessert
15. Rice plates
16. Soup plates
17. Curry dishes small

18. Racks for Bread
19. Trays large
20. Food cover
21. Covers for trays

Toilet Facilities

Separate attached bath-rooms and toilet facilities for each room are important.
Cold water or Hot water should be provided.

Separate cleaning utensils for each rooms are preferred.

Bed pan wash and geyser if possible.

i.	Bed pan s/s	01
ii.	Triangular Tray	01
iii.	Sputum mug enamelled/ss	01
iv.	Bowls	01
v.	Pails enamelled /ss	01
vi.	Urinals /ss	01
vii.	Toilet paper to be supplied	

Other Utensils

i.	Medicine glass	01
ii.	Thermometer in a holder	01
iii.	Flower vase	01

Staffing Patterns

01. Nursing care by the Nurses and trained attendants
To meet this objective adequate number of nurses and attendants and labourer should be allocated.
Decision regarding requirements should be taken by the Director /in consultation with Nursing Officers Special Grade.

02. Special attendants could be allowed with the permission of the hospital authority. Relatives should not be utilized as helpers for nursing care duties.

ADMISSION PROCEDURE
ADMISSION OF A PATIENT (DIRECT)

1. Patient has to obtain a letter from the Consultant of his choice.

2. Patient should register his name in the waiting list in the hospital office by depositing Rs. 15/-

3. Patient / relative should be informed by telegram or telephone when there is a vacancy. Confirmatiom should be obtained whether the message has reached the correct person.

4. If there is no response within 48 hours the next in the waiting list should be contacted.

ADMISSIONS FROM NON - PAYING WARDS

a) Needs to write on the B.H.T. by the Specialist ; to hospital authority to permit paying ward facilities.
b) Priority could be give to those who are requesting from a non-paying ward.

ADMISSION TO THE WARD.

i. Separate Bed Head Ticket Number should be issued. Separate design is ideal.
ii. Confirm whether the consultant has given his consent to admit to a paying ward.
iii. Obtain receipt from the patient, concerning payment. Vide general circular No. 1815 of 10.02.1994.
iv. Hand over 2 visitors passes sanctioned by the nursing officer special grade.
v. Usual admission procedure has to be carried out
vi. Accompany the patient from nurses station to the allocated room.
vii. Introduce the procedures which have to be followed by the patients and their relatives while patient is hospitalized.
viii. Hand over all utensils and other inventory items which are used in the room and request the patient / Guardian to sign the book.
ix. Inform patient guardian that he is responsible for the loss of property in his room.
x. Patients should be advised not to keep valuables with them. Smoking, liquor narcotics are not allowed in the rooms.

GENERAL RULES FOR THE PATIENTS AND THEIR VISITOR

1. Patients are required to stay inside their allocated room without going into others' rooms in other areas of the hospital.

2. Paying patients are not allowed to go out of the hospital without approval from their particular consultant and the Hospital Director/ M.S. 2 hrs short leave is permitted with approval from the hospital authority.
No patient is allowed to stay out over night. Those who obtain special permission, are required to report back before 8.00 p.m.

VISITORS

3. All visitors to the paying patients should adhere to the usual visiting hours of the hospital.

4. Visiting should be restricted to visiting hours. Husband or wife or bystander of the patient is allowed to stay with the patient. Children are permitted to have, either the mother or father.

5. Rooms should not be locked from the inside for any reason. Door should be kept open during day time, but may be closed without locking at night.

ELECTRICAL APPLIANCES

No private electrical items are allowed to be used inside the rooms-Specially electric hot plates and kettles. Radio or Television set may be allowed after obtaining permission from the hospital authorities . Must ensure that other patients and staff are not disturbed.

SPECIAL ATTENDANTS

Special attendants who are authorized by the hospital are permitted to attend on these patients. Hospital employees are not allowed as special attendants.

VISITORS' PASSES AND CAR PASSES

1. 2 Visitors passes are issued after admission to the ward. One visitor could stay with the patient.

2. Extra passes could be issued to visitors for urgent and important reasons.

3. One car pass could be given to bring the car inside the hospital premises during visiting hours. Vehicles are not permitted to be kept overnight.

SURGERY

1. Normal routine preparations should be followed.

2. Complete physical examinations and relevant investigations have to be noted and carried out before surgery.

3. Consent should be obtained.

4. Paying ward patients may be permitted to wear their own clothing preferably white to go for surgery

5. Nurse has to accompany the patient to and from the operation theatre.

6. Medical officer should categorise the surgery and this should be entered in the B.H.T for costing purposes.

WARD ROUNDS AND OTHER RESPONSIBILITIES OF THE NURSING STAFF

1. Maintain good interpersonal relations with the patients and their visitors.

2. Main responsiblilities and duties are same as in any other ward, except on admissions, discharges and deaths.

3. Nurses should do ward rounds and give over patient by patient to the nurse of the next shift.

4. Nursing officer special grade is responsible to pay visits to these patients daily.

5. Any change in the condition of the patient should be informed to the nursing officer Special grade.

6. All new admissions and deaths should be brought to the notice of the nursing officer special grade.

7. Night supervisor should visit these patients daily, and report to the N.O.S.G. regarding their condition.

8. Nursing staff shall take adequate precautions to prevent accidents and cross infection of these patients.

9. Patients should not continue any drug without particular medical advice.

10. Nurses shall permit these patients to wear their own clothes in the ward

.

DIETS

Diets are ordered according to the medical advice.

Cost of the diet. Menu is decided by the hospital authority within the amounts charged from them. Cost of the diets will vary according to the patients.but if the patient wishes to have some extras that could be allowed within the cost. Meals will be served at the usual times of the hospital and individually in seperate trays. No cooking is allowed in the rooms.

If possible, separate kitchen with trained cooks should be organised or a separate section of the common kitchen for preparation of meals for P.W. patients. Variety of meals should be served. If a patient is admitted before 11.00 a.m. he is entitled to have meals from evening tea.

Patients admitted after 11.00 a.m. are entitled to meals after 2.00 p.m. the following day.

If any patient is scheduled for discharge at 11.00 a.m. he is entitled for meals till evening tea of the same day. Patients who are discharged at 5p.m. are entitled for meals till evening tea of the following day since they are charged for the following day too.

SPECIAL INVESTIGATION

1. Scanning and other special investigations should be done in the same hospital if they are available. Patients are permitted to get investigations done outside with the permission of the hospital authorities.
2. Consultant shall order the investigation.
3. Rates for investigations must be obtained and the charges paid. Receipt should be produced from the place where investigations are done.
4. If the patient wishes that investigations be done out side all the arrangements have to be made by the patients/ relatives.

Communication System

1. All patients must be provided with call bells.

2. Patients should have facilities for telephone calls.

3. V.I.P. P. Should have Direct Line Telephone facilities; if possible

4. A communication desk with a senior nurse should be made available near the nurses, station. This nurse should be provided with sufficient booklets giving relevant information for the use of patients.

5. A visitors book for comments by patients/relatives should be made available to them when requested and on leaving.

CLEANING

1. Separate cleaning service is ideal if possible

2. Clean the toilets 4 times daily
   Morning at 6.30 a.m.
   Afternoon at 2.00 p.m.
   Evening at 5.30 p.m.
   Night at 8.00 p.m.
   If possible use deodorants.

3. Sweep the floor of the ward 3 times daily morning afternoon and night.

4. Mop rooms twice daily. (Morning and Afternoon)

5. Clean the other places of the room eg. doors & windows daily.

6. Polishing should be done weekly and all the rooms should be polished after discharge or death of a patient.

7. All the utensils should be cleaned once, daily.

8. Crockery and cutlery should be cleaned after every use. Placed in boiling water before use.

9. All the furniture should be polished once a year, along with the white washing of the ward.

10. Brass should be polished once a week.

11. Dusting of furniture, door, windows and beds should be done daily.

12. Universal Precaution and specil cleaning methods for patients with infectious diseases should be used.

13. The pantry should be cleaned daily.

DISCHARGE FROM THE HOSPITAL

1. Consultant should write in the BHT date & time of intended discharge i.e. 11.00 a.m. and 5.00 p.m.

2. Patients should be given sufficient time to have the payment ready on discharge . Time of discharge of the patient should be entered in the BHT by the nurse.

3. Reports of all the investigation should be attached to the B.H.T.

4. All private x'rays and investigation reports should be handed over to the patients /relations.

5. All operations performed on the patients should be categorized according to the classifications done by the Ministry of Health, Circular No. 1815 on 10.02.94.

6. All investigations, special tests and operations should be entered separately in the BHT for purpose of billing.

7. BHTT transferred with the patient from the non-paying wards should be sent back to that particular ward.

8. The BHT should be sent to the hospital for office billing and from there it will be sent to the Record room.

DEATHS

1. The medical officer should be summoned immediately to certify death.

2. Nursing Officer on duty is responsible for the preparation of the body before removal to the mortuary.

3. The BHT should be prepared in the same way as in a discharge.

4. The Death Certificate should be handed over only after the bills are settled.

5. Patients who are not Citizens of Sri Lanka
   1. These patients are charged accoding to Circular No.1815 of 10. 02. 94

CHAPTER 10

MANAGEMENT OF NURSING CARE SERVICES

1. INTRODUCTION

"Health" is a generally accepted right .Well-being is the norm towards which all health personal direct their efforts.

- One of the primary functions of the nursing and medical professions is to help individuals, families and groups reach the highest level of well being.
- A person's perception of health is based on a complex inter-relationship among the physiological, emotional, social, intellectual, cultural and developmental components of the self.
- Distribution of wealth, quality of life, level of poverty and level of education are essential determinants of health.

2. OBJECTIVES OF MANAGEMENTS OF NURSING CARE

To provide the best prompt curative nursing care to the sick as close as possible to their home.

To promote health, to prevent illness, to restore health, to alleviate suffering are the fundamental objectives.

Staff development to give quality nursing care to patients.

To practice nursing in accordance with standards of the profession.

Fulfil the professional promises made to the public.

To increase the knowledge of public by educating them while they are in the hospital to prevent diseases.

Participate in and promote the growth of the nursing care services rendered to the public.

Assist in the promotive, preventive curative and rehabilitatire services pertaining to the patient, family and community.

The health maintenance of health attainment stage in which the principles of healthy living (Physical and Mental) and the fundamentals of good hygiene and good nutrition are taught and practiced.

The increased risk stage, in which preventive measures are taken to protect those who are exposed to any sort of increased health risk.

The rehabilitation stage, in which disability is prevented or if this is not possible the patient is helped to use his entire remaining potential. If there is no hope for rehabilitation, and death is inevitable, this stage provides the opportunity to prevent unnecessary deterioration and to assist the patient in those activities that contribute to a peaceful death. And to do this in such a way as to help him gain independence as rapidly as possible.

a) The components of Basic Nursing Care

1. Helping patient with respiration

2. Helping patient with eating and drinking

3. Helping patient with elimination

4. Helping patient to maintain, desirable posture in walking sitting and lying and to move from one position to another

5. Helping patient to rest and to sleep

6. Helping patient with selecting of clothing with dressing and undressing

7. Helping patient to maintain body tempetature within normal range.

8. Helping patient to keep body clean and well groomed

9. Helping patient to avoid dangers in the environment and protecting others from any potential dangers from the patient such as infection or violence.

10. Helping patient to communicate with others to express his needs and feelings.

11. Helping patient to practise his religion or to conform to his concepts of right and wrong.

12. Helping patient with work or productive occupation

13. Helping patient with provision for recreational activities

14. Helping patient to learn

b) Who is a Nurse

A Nurse is a person who has completed a program of basic nursing education and is qualified and authorised in his /her country to practice nursing. Basic education is a formally recognized program of study which provides a broad and sound foundation for the practice of nursing and of post basic education which develop specific competence. Nursing is concerned with caring of people throughout the span of life, and at all points on the continuance between sickness and health.

Nursing is a profession in its own right. As such it has the right and responsibility to govern it's own practice and professional affairs, and accepts a commitment to society in accordance with professional ethics.

c) Who is a Patient

1. The patient is the most important person in the hospital

2. The patient is not depending on us. we depend on him.

3. The patient is not an obstruction to our work. He is the object of our work.

4. The patient is not an outsider to our day-to-day work. He is our work.

5. The patient is an individual and not just an entry in our register.

6. He is a very busy person and is weighted with feelings and doubts.

7. The patient has the "RIGHT" of all, rather than a privilege

d) Ethics in relation to the Nurse Motives for nursing

1. To have joy in caring for sick people

2. To be a means of exercising authority

3. To satisfy a desire for orderliness

4. To show our knowledge

5. To wear an attractive uniform

6. To satisfy the desire to make ourselves attractive to other

7. To fulfil a wish to become a professional person.

e) Ethics in relation to the patient

The International Code of Nursing Ethics

Nurses provide health services to the individual the family and the community and coordinate their services with those of related groups.

The nurse while providing care promotes an environment in which the values customs and spiritual beliefs of the individual are respected.

The nurse uses judgement in relation to individual competence when accepting and delagating responsibilities.

The nurse shares with other citizens the responsibility for initiating and supporting action to meet the health and social needs of the public.

The nurse is active in developing a core of professional knowledge .
A nurse acting through a professional organization, participates in establishing equitable, social and economic working condition in nursing.

3. STAFF NORMS FOR DIFFERENT UNITS/SHIFTS

Managing a Ward

Standards of wards are different. It is the duty of the ward sister or the In charge nurse to organize the ward activities properly which can give patient care smoothly and run the ward in a peaceful manner

a) Organization of a Ward in relation to the care of the patient

"The patient comes first" the unit should be organised to the patients' feeling of security and comfort when nurse serves the patients.

What is organization

This depends on,

- The atmosphere in the ward. It should be quiet, efficient and happy.

- The respect with which he is treated as an individual with a name (never as the bed number or disease) whose personal needs should be considered at all times.

- The care, gentleness and efficiency with which his treatment is given.

If these needs are attended

The patient will have confidence and trust and will respond more effectively to treatment.

b) Recognition of client factors influencing Nursing care

a) Hierarchy of needs - Needs to survive physiological needs for such things as air, food water.

b) Need for safety and comfort, physical and psychological security.

c) Interpersonal needs social needs for love, acceptance status and recognition

d) Organizing the human resources

Ex. Nurses, attendants and other staff should be organized to give patient care in a team method

e) Organization of patient care assignments

i. Patient assignments (Patient centered method)
ii. Job assignments
iii. Group assignments (Team Method)

Patient Assignment

One nurse is totally responsible for certain patients(for very ill)their treatment and nursing care.

Ex : Giving care to an unconscious patient 4 hourly and giving Nasal feeds 4 hourly.

Job Assignment

One or two nurses carrying out routine work for the whole or part of the ward, giving medicine, injections and dressing of wounds etc. Carrying out all routine duties for the allocated group of patients. This method is useful and economical for convalescent patients. Better nursing care willl be provided to the individual patient.

Factors depending on this

1. The size of the ward

2. Type of ward (Ex. Cubicle, four or six beds)

3. Heavy medical surgical or gynaecological

4. General layout of the unit

5. Location of the equipment

6. Available number of personnel (trained and knowledgeable)

c. Create a suitable environment

- Provision of a safe atmosphere, fresh air, light, cleanliness, noise free, air control.(Prevent source of infection)

- Attention must be given to provide pleasing color effects as well as comfort and convenience in furnishing

- Provide an environment which is safe and comfortable for its workers which will promote efficiency and morale.

d. Supply adequate equipment

- Equipments need to be easily accessible, clean and in working condition

- The efficiency of the organization depends upon having adequate of the "right kind at the right time" in a right place

- Carefully thought out standards of supplies and adequate equipment are a necessity in ordering.

- A system for reporting when supply is low or equipment is out of order to all the members of the staff.

e. Ward Routine

- Suggested sample of ward routine for 24 hrs.

a) Ward must never be unattended always nurses should be with the patients in the wards/units.

b) Before and after procedures every patient should be left comfortable and the sur roundings tidy.

Example :- Morning Routine 7 a.m. - 1 p.m.

- Day nurses report on duty and take over the ward / unit from the night nurse after doing a ward round. After handing over the patients and sub inventory items to the day nurses, night nurse can go off duty.

- Sister in charge allocates patients' care and other routine work to nurses and other staff.

- Serving breakfast, giving medicine, getting the ward swept by the auxiliary staff.

- Doctors ward rounds, sister or nurse in charge doing the toilet round and getting organized for patient care.

- To see to the supplies in the ward and arrangements should be made for the after noon shift nurses.

Afternoon and evening Routine : 1 p.m - 7 p.m.

- Afternoon duty nurses report on duty and take over the ward from the morning shift nursing staff.

- The allocated work should be performed, evening care, medicine, injections at scheduled times.

- Patients who have had operations should be under continuous observations and made comfortable.

Night nurses Routine : 7 p.m. - 7 a.m.

- Night nurses report on duty and take over the ward from afternoon duty nurses.

- Reading the day report and treatment carried out as prescribed .

- Giving the orders to the attendants to see to the patients' urinals and bed pans and see to the sanitary cleanliness by the conservancy labourers.

- Drinks to the patients who need a cup of tea.

- Care to very ill patients and sedatives according to the doctors' prescriptions and other routine work by the nurses.

- Lights off after 9.30 p.m. (inside the ward)

- Ward rounds with the night sister (information should be given regarding the very ill patients and also if there is any problem)

- Night reports and prepare for early morning routine

- If possible two hours rest to be taken by each nurse in turn between the hours of 12.00 midnight to 5 a.m.

- 5 a.m. lights on and the morning temperature to be taken. Care should be given to very ill patients. Further care and treatment may be needed for some patients. Collect specimens, prepare for special tests and surgical preparations. Completion of all intake and output charts. Tidy the ward to hand over at 7 a.m.

f. Technical Supervision

The quality of the nursing care given to the patients in the wards and units depends mainly on the technical supervision by the sister or the charge nurse. Daily ward rounds in each shift with the nurses to take over and hand over in each shift. (when sister is not there the senior staff nurse should perform)

Ensure that the cleanliness of the unit is maintained and nursing care is given to the patients as per standards laid down.

To have a check list of technical matters to supervise during the ward round.

Examples :-

Whether foetal heart sounds are regularly monitored during labour, monitoring the mother in the post partum period, maintenance of sterilization, charts, maintenance of records, of health educatoin, nurses notes of giving injections and medicine.

g. Personnel Management

Includes induction training of nurses and minor staff

- Assignments

- Personal Policies

- Reports, Confidential and anecdotal

- Guidance and counselling of nurses and other personnel

- Regular staff conferences with the head of the unit (all other categories of the workers in the unit should be included)

h. Role of Ward Sister in quality assurance of Patient Care

a) Health education and community education for patients and visitors who come to the unit.
(for this purpose a staff nurse to be in charge of the unit and keep health education records)

b) Provision of safe water to patients and staff.

c) Control of communicable diseases (Notification book).

d) Sanitation - Cleanliness and refuse disposal.

e) Maternal care.

i) Haemoglobin Percentage and urine.

ii) Natal and post natal care.

iii) Asepsis of labour room.

f. Efficiency of sterilization of instruments

Sterilization Charts

g. Family Planning

- Availability of I.U.D. insertion facilities
- Availability of contraceptives

h. Nutrition

- in patient diet according to the diseases

i. Immunization

a) B.C.G. to new born
b) Maintain the cold chain
c) Availability of vaccines

j. Nursing Care

- Day and Night report in the ward and mid night report with the daily statistics.

- Drug administration records

- Nurses notes

k. Prevent Cross infection

l. Laundry Services
Changing patients, bed linen according to the availability

m. Oral rehydration therapy in each unit
(Medical and children's wards)

n. Courtesy to patients and relations

RELATIONSHIP - SISTER AND NURSING STAFF REGARDING NURSING CARE.

1. Discuss issues regarding patient care before implementing.

2. Listen to complaints brought by patients, discuss and solve problems without delay.

3. Indulge in constructive criticism and not destructive criticism.

4. Recognise work done by your staff and praise when necessary and counsel staff if on the wrong path.

5. Give opportunities for staff development.

6. Regular staff discussions and conferences.

7. Frequent continuous supervision of staff performance.

4) **LEADERSHIP BY THE MATRON AND THE WARD SISTERS IN ADMINISTRATION, MANAGEMENT AND SUPERVISION**

1. What is leadership :

It is a process of influencing the action of an individual or group towards specific goals in a particular situation.

Nursing Leadership

It is the ability to use the process of life to facilitate the movement of a person, a group, a family or a community towards establishing and attaining a goal pertaining to health.

2. Purposes of Leadership

- To lead a group in the right direction

- To keep the group moving constantly forward

3. How can leadership be effective to patient care

By maintaining the spirit of cooperation and enthusiasm of subordinates based on good human relationship.

a) Interpersonal influence depends on a knowledge of human behaviour and sensitivity to others in feelings values and problems.

b) Being well trained

c) Being skilled worker

d) Working in an organization efficiently

e) Being able to meet the goals

f) Improving one's job performance and of others as well.

g) Communication is an essential component of leadership (written, verbal, non-verbal, formal or informal)

h) Power is a leader's source of influence

i) May be professional or positional

j) Leadership process requires the use of actions associated with problem-solving, decision-making, relating, influencing and facilitating.

k) Need for change should be understood by those effecting the change, as well as those affected by the change.

l) Effective use of leadership is conducive to accomplish the goals of the group.

m) An evaluation process is necessary if the results of efforts to attain the goals are to be interpreted accurately.

n) Goals should be short term and long term. Evalution process influences its success.

4) Types of Leadership

- Autocratic
- Democratic
- Laissez faire

Autocratic : Leader does not seek input from the group but sets the goals plans, makes the decisions and evaluates the action taken.

Democratic : Leader seeks input from the group and responsibilities for action taken are shared between the leader and the group.

Laissez Faire : Input and the control of the group is minimal permitting each individual to set independent.

5) For successful leadership following ideas are considered :

Be courteous to every one. Courtesy is merely doing the kind thing in a kind manner.

Have the courage of convictions. Be sure you are right and then stick to it.

Learn to take criticism. Realize that criticism is directed towards the job and not towards you as an individual.

Forget disappointments. They belong to yesterday, you belong to tomorrow.
Do not discuss ward activities or office matters outside office, this can be fatal to your job and very damaging to your employer.

Be enthusiastic - Be friendly; to have friends (have one) never nag or gossip.

Be fair. Give to each his or her due.
Be clean mentally, physically and spiritually.

Have energy - Have a sense of security in your work. It is the first and most important step to success.

Be generous. Generous with your time, generous with your praise.

Be healthy, physically and mentally.

Be honest with yourself and your employers in thought and in deed

Be a good listener. Listen carefully and attentively

Be sentiment out of your office time

Keep your home worries and troubles to yourself

Do not agitate -Admit you are wrong if you are and do not make the same mistakes again.

What is Administration

Administration means to care for or to look after other people to help manage their affairs.

What is Management

It is the art or a process a manager takes to get things done through the people.

L.D. White definess management as " The Direction, coodination and control of many persons to achieve some purpose or objectives"

Principles of Management

a) Identify the people of organization.

b) Continuing service.

c) Make a good plan.

d) Make long and short term objectives.

e) Understanding and acceptance of objectives.

f) Maintain interpersonal relationship.

g) Concentrate on individual improvement

h) Provide opportunity for self development

i) Maintain reward and punishment

j) Provide job satisfaction

6) Matron and Sisters as leaders for effective patient care management

a) Definite plans must be formulated according to objectives, policies standards and work procedure

Caring for the patient	Achievement of the Aim of the Organization	Interpersonal Relationship
- Continuous Nursing Care		Coordination
- Evalution of the Care		Supervision
- Planning and Directing the care		

b) All personnal and their activities must be systematically arranged so that responsibility and the authority for specific and well defined duties can be delegated.

- The hospital organizational charts
- Written policies
- Lines of Communication
- An adequate number of qualified personnel
- Use of each persons capabilities effectively
- Interpersonal relationship to coordinate the activities

- Best results to be achieved with minimum resources regarding time, effort supplies and equipments.

- Adequate reports and appropriate record keeping

c) Must have an adequate number of qualified personnel

- Qualification of each employee

- Demands of the job

- Importance of the Job

- Inservice education

d) Administration (Matron & Sisters) must use each person's capabilities effectively.

- Principles of administration

- Tools of administration

- Job satisfaction

- Right person in the right place, at the right time

e) Cooperation with various Departments is essential to coordinate the activities of various Departments and personnel. It is done by

- Working together harmoniously

- Making full use of the facilities

- Maintaining the spirit of team nursing

- Smooth functioning of a nursing unit

- Clear understanding among the personnel and extending help to each other

g) Best results must be obtained with minimum resources by better utilization of the time, efforts, supplies and equipment.

h) Maintenance of adequate reports and recorded

- Documents of activities of the Personnel
- Progress of organization
- Progress of work
- Standard of nursing care
- These reports and records help to evaluate the programme of the organization.

7. Matrons and Sister Leadership in Supervision

Introduction

Supervision is a part of teaching, learning process. It involves advising helping inspiring, Leading and Liberating.

It is also one of the important tools of administration to ensure the successful comple tion of the work done. Supervision is not simply carried out for inspection and criticism.

Purposes of Supervision :

1) To improve the quality of work to the highest possible standard.

2) To enhance qualitative growth personally and professionally.

3) To ensure meeting the goals of an organization.

4) To ensure successful completion of work.

Principles of Supervision :

1) Good supervision is focussed on improvement of the work rather than on upgrading the worker.

2) Good supervision is based on the needs of individuals which has been cooperatively determined.

3) It is cooperatively planned objectives, methods of supervision and criteria for judging success in the attainment of goals that are jointly established.

4) Techniques carried out in good supervision are democratic in nature.

5) It should be a helping process to stimulate the staff to continue self improvement.

6) Respect the individuality of the staff member.

7) Help to create a social, psychological and physical atmosphere in which the individual is free to function at her own top level

Functions of a Supervisor

a) Plan

b) Observe

c) Care

d) Evaluate

a) Planning Function

It has 7 guideline words

- Why are we doing this ?
- What are we going to do ?
- Who will do it ?
- Which things do you need ?
- How will you do ?
- When will you do ?
- Where will it be done ?

b) Observing

Supervising needs "Eyes in the back of the head"

c) Caring

Supervising is a helping process

- Ensuring is a helping process
- Pleasant working conditions
- Adequate facilities
- Smooth running work programme

d) Evaluting Functions :

A supervisor should not only observe the functioning of a programme he /she should attempt to evalute its effectiveness in the context in which it is working

Qualities of a good Supervisor

- Sincere
- Honest
- Communicative
- Supportive
- Knowledgeable
- Considerate
- Motivated

How to supervise :

Situations - Wards
- Clinics
- Field
- Staff Conferences.

Aspects of Supervision

Substantive	Concerned with activities ; work done
Techinical	Method of work
Line	Direct and Commanding type
Functional	Staff functions by subjective, specialists

Methods

- Achievements of target
- Use of work plans
- Reporting systems
- Supportive Guidance and advise
- Improving efficiency and effectiveness

See that rules and regulations are observed

The problems the supervisor faces could be described as :
"The dilemma of a supervisor"

How can I be

- Aggresive but not offensive
- Supportive but not tolerate inadequacy
- Keep things moving but not boss
- Ensure improvement but not use force

- Challenge but not threaten

- Have many creative ideas but not have all the answers

- All these but not to be "Unpopular"

Characteristics of the Nursing Officer Special Grade (Matron)

- Matron or N.O. special grade implements and administrates all nursing staff ensuring that high standards of professional conduct and safe standards of nursing care are maintained .

- Her duties require independent judgement

- Decisions based on experience and knowledge

- Understanding of good practical knowledge of the nursing team when giving care

- Planning and implementing good nursing practices by holding regular staff meetings and discussions.

- Skill in effectively coordinating the work of others and maintain good working relationships with associates and subordinates

N.O Special Grade is responsible for :

1) Planning administrative regulations given by the Department to maintain efficient nursing service.

2) Developing policies in the institution for nursing service.

3) Assisting the Director /DMO in administrative duties.

4) Attending meetings with nursing and auxiliary staff regarding patient care and staff developments.

5) According to the needs of the wards units advising on the purchase of equipments used for nursing services.

6) Supervising the maintenance of drug registers and sub inventory records maintained by nursing staff.

7) Maintaining the attendance registers and leave registers in the office

8) Investigating complaints and taking action if necessary

9) Coordination of nursing services with other aspects of institutional requirements

10) Establishing satisfactory methods of communication, promoting and maintaining good inter personal relationship with all grades of staff

11) Attending regular ward rounds including visit to clinics other Departments and special visits to very ill patients.

12) Inform the Medical Director? DMO of all the activities and problems relating to the nursing care

13) Supervision of adequate supplies for carrying out nursing service

14) Maintaining ward procedures according to the standards

15) Delegating responsibilities and authority to nursing sisters

16) Director guidance and supervision of the ward sisters in the efficient running of the wards.

17) Encourage the sisters to assess the effectiveness of their own work and to develop their own capabilities in ward management

18) Helping the sisters to develop the team spirit, both within the group of nursing personnel and other Department workers in the institution.

Towards : Nursing Staff :

- To promote safe standards of nursing care.

- Supervision of the work of all nursing staff related to nursing care.

- Receiving reports from both the day and night staff on patients care and progress.

Auxiliary Staff

- Supervising the auxiliary staff related to nursing care procedures and cleanliness of the ward/unit/institution

- Regular contacting the auxiliary staff for teaching and encouraging them to follow safe practices and for obtaining their cooperation in the delivery of good patient care.

- Supervision of the whole hospital and its compound with a view to providing a clean safe environment in which patients can be cared for

- To help them to understand the importance of their role of conduct regarding the patients care in the ward/unit.

As a Matron she is responsible for the following as well :

- Health education

- Inservice education for the staff

- Recording and reporting

- Maintenance work (ex. equipments and instruments)

- Organizing the hospital staff in cleaning, incinerating, waste disposal and water supply.

- Social work (to establish good relationship with the medical staff and outsiders to obtain their cooperation in the efficient and effective care towards the patients

Responsibilities of a ward sister :

Functions :

- Incharge of a ward or group of wards

- Responsible for the standard of nursing care of the patients.

- Supervision of the nursing and auxiliary staff assigned to the ward.

- Responsible for the maintenance of the cleanliness of the ward and surroundings and maintenance of linen, equipment in her charge.

- Serves as a primary resource in nursing services practices to all other hospital staff.

- Promoting health education as an integral part of nursing care.

Characteristic of Ward Sister

- The Ward Sister implements, manages and supervises

- High standard of professional conduct and promotes safe standards of nursing care through other members of the nursing team

- Duties require independent judgement and decisions based on experience, knowledge of hospital team work and standard practice of good nursing care through working in the wards.

- Assist the ward nurses in planning and implementing good nursing practices

- Demonstrates knowledge and application of theories and principles related to safe and effective nursing care

- Skills in effective coordinating of the work of others

- Maintaining good relationships with nursing staff in the unit and others and subordinates.

Management and Administration by Ward Sister

1) Planning daily work with nursing staff and assigning duties to nursing and auxiliary staff on day and night duty. Arranging duty hours of staff.

2) Writing of nursing orders and reports, giving and receiving reports, reporting the daily census, safe keeping of patients records while they are in hospital.

3) Maintaining cleanliness of the ward and surroundings, furniture and equipments, responsibility for the general environment ventilation, lighting, noise, odours, prevention of cross infection and regular disinfection.

4) Maintaining adequate linen and other supplies requisitioning stores and repairs and replacements as necessary. Ensuring economy and care in use of equipment and supplies.

5) Keeping drugs in her custody and maintaining the records.

6) Checking all equipment periodically to see that it is in good order.

7) Daily checking on availability and condition of emergency equipment and supplies.

8) Maintain inventories, reporting breakage and losses.

9) Supervising nursing routine of admission and discharges of patients, ensuring that discharge tickets are given and instructions for further attendance to clinical or further care are given.

10) Ensuring that relatives of very ill patients are arranged to stay with the patients when necessary.

11) Arranging for patients property in safe custody and on discharge it is handed over or on the death.

12) Accompanying Senior medical staff on their rounds bringing to their attention points of importance about the patients.

13) Arranging the doctors to get assistance when required.

14) Accompany the NO special grade and Director/ DMO on ward rounds reporting to them the important incidents.

15) Investigating complaints by patients or other staff promptly and taking action according to rules.

16) Reporting absence and sickness of staff.

17) Informing immediately of any emergencies or accidents in the ward to Director/ DMO and Nursing Officer special grade.

18) Inservice education to staff in the unit and unit conferences with the medical and nursing staff and others.

Ward Sister as a Supervisor to

a) Nursing staff in the unit

* For providing direct guidance and supervision of the staff nurses in the efficient running of the ward and carrying out nursing routines, bearing in mind the individual needs of patients.

* Delegating responsibility and authority to the staff nurse

* Encouraging staff nurses to assess the effectiveness of their own work and develop further their own potential for giving good nursing care.

* Helping staff nurses to develop a team spirit with their colleagues, Medical staff and other staff in the unit.

Ward Sister should be helpful in :

- Health education

- Inservice education, orientation of new staff, skill training to teach new techniques

- Participating in training student nurses, attendance, auxiliary staff

- For directly guiding and supervising the provision of a clean safe environment in which patients can be cared for.

5. IMPORTANCE OF REGULAR CONFERENCES WITH STAFF BY MATRONS

Definition

"Conferences" means having communication ; as conferences or meetings and committees are to give information and getting opinions from others at times it is beneficial to have conferences.

Purposes of Conferences

- To give information
- To obtain information
- To bring together the knowledge and experience of people with expertise, to solve problems
- To develop cooperation between people with different views and influence attitudes.
- To allow the participants to ease their grievances
- To make decisions within the authority
- To come to a conclusion

Advantages of Conferences

- The members have opportunity to discuss and contribute their ideas to a common goal.
- More experience and knowledge can be brought together.
- With the same amount of time more information can be gathered.
- Profitable outcome of ideas.
- Proposed new solutions to problems.
- Job satisfaction.
- Self esteem is motivated by making a worthwhile contribution to the organization.
- Possible cause of trouble can be avoided.
- Flow of communication downward and upward is improved.

Disadvantage of Conferences

- Delay can occur in three ways

1) Decision taking may be unduly postponed

2) Delay in calling a meeting. Difficult to get down the people at short notice

3) Irrelevant discussions delay decision-making

Size of meeting :- More effective in smaller groups

Types of meeting

- Executive Meetings
- Decision making meetings
- Discussion and advice
- Problem solving Conference
- Information giving conference

Monthly and weekly conferences are arranged.

6. INFORMATION DESKS DURING VISITING HOURS.

This is very important in all hospitals, wards/units and Outpatient Department.

Objectives :

1) To alleviate fears of the patients and visitors;

2) To guide the patients and visitors coming to hospitals

3) To have good relationship and understanding about the institution;

4) To educate the ignorance;

5) To help the disabled patients and to take prompt action in an emergency situation.

In each unit during the visiting hours one nurse can be seated near a table. The information can be given by keeping a visual aid with simple lettering in all the languages : "Counselling Nurse"

7. IMPORTANCE OF HAVING NURSING CARE PROCEDURE MANUALS

The policies and procedure manual are the most effective management tools. It provides the idea of comprehensive framework of nursing and gives direction to achieve the objectives.

Can be used as

- An instrument for orientating new staff.
- Reference when unexpected problems arise.
- Foundations on which administrative procedures are developed.
- Basis of discussions when needed.
- Boundaries within which the hospital can work and convey its beliefs
- Lay out guidelines to the nursing staff doing management and nursing care
- Standards could be maintained

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CHAPTER 11

DISASTER PREPAREDNESS AND MANAGEMENT

01. INTRODUCTION

Civil distrurbances, communal clashes and terrorist attacks have become a major problem for the Health Care Institutions in Sri Lanka during the last decade.

Mass casualties following acts of violence have conferred a new means to surgical casualty services of Sri Lanka . And also mass transport by surface and air, construction of high rise buildings may result in accidents which can cause a sudden influx of a large number of seriously injured persons to nearby hospitals.

Therefore the large Health Institutions should be organised with staff and equipment to cope with these casualties.

Arrival of a large number of casualties within a short space of time and the presence of a large number of unwanted sightseers and media personnel may complicate the proceedings considerably.

Therefore the full implications of a major disaster need to be considered in order to avoid confusion on such occasions.

2) OBJECTIVES

In a major disaster a large number of casualties arrive within a short period of time with little or no warning. The main objective of disaster preparedness is to avoid chaos developing on such occasions.

3) DISASTER PREPAREDNESS PLAN

A hospital cannot possibly organise itself to receive the victims of a major disaster without detailed planning beforehand. The planning is incorporated into a document known as "Major Disaster plan" or "Major Accident plan"

This contains the details of all activities that everyone associated with the plan will have to carry out. It is unrealistic to expect individual members of staff to be familiar with the entire plan. Therefore the plan should be summarized in individual documents known as "Action Cards"

4. INTERPRETATION

As far as the hospital is concerned a major disaster is any event that results in live casualties in such a number that call for extraordinary measures to be taken for their reception and treatment.

General Hospital Colombo considers it as a Major Disaster, a situation where more than 30 persons have been seriously injured simultaneously as estimated by a reliable informant.

5. INITIATION OF THE PROCEDURE

Notification of a major disaster generally comes from the police. Declaration of a major disaster causes considerable disruption of normal activities of a hospital and therefore it must be justified. Such a declaration can be made only by the Head of the Institution or his deputy and in the absence of both of them it should be a Senior member of the staff, a Consultant Surgeon.

He should immediately contact

a. The Telephone exchnge

b. The Command Staff

c. Police

d. Transport Section

e. Voluntary Organizations

The telephone exchange should carry out the Disaster plan as per action card provided.

The Command Staff consists of :

a. Director

b. Consultant Surgeon

c. Consultant Anaesthetist

d. Consultant Orthopaedic Surgeon

e. Matron

f. AO /Clerk

g. Overseer

Each of the above mentioned officers should be responsible for alerting their teams/assistants.

The Disaster Team should consist of the following officials

a. Consultant General Surgeons

b. Consultant Orthopaedic Surgeons

c. Consultant Anaesthetists

d. Resident Surgeons

e. Anaesthetists

f. Medical Officers

g. Matrons

h. Nurses

i. Radiographers

j. Pharmacists

k. Clerks

l. Overseers

Every members of the team will be expected to suspend whatever each would be doing appointing a Deputy to take over if this is possible and proceed to the Accident Department /OPD without delay and carry out instructions listed in the Action Card.

The following are alerted

1. Consultant Neuro Surgeons

2. Consultant Cardio thoracic Surgeon

3. Consultant ENT surgeon

4. Consultant Eye surgeon

5. Consultant Radiologist

6. Consultant Physician

06. Action to be taken while awating for the casualties

Director/Deputy/Consultant Surgeon will be responsible to carry out the following.

6.1 Organize Medical staff as they arrive .This is important as staff normally arrive in excessive numbers and may cause considerable confusion.

6.2 To distribute Arm Bands (DISASTER TEAM) among the members of staff who are directly involved with the activities of the Disaster plan.

6.3 Clearing the Surgical wards -All cold cases to be discharged as far as possible.

6.4 Clearing the OPD as quickly as possible.

6.5 Consider stopping routine admissions.

6.6 Alert the theatres and CSSD

6.7 Provide additional beds in Genaral wards to accommodate casualties.

6.8 To alert Blood Bank

6.9 To deploy patient stretcher trolleys

6.10 Medical Supplies

Ideally the following items must be kept in a separate store room in OPD area (Disaster store room). If this is not possible a disaster cupboard should be kept in the OPD and the key must be kept with the Sister /Nurse in charge at all times. A duplicate key must be kept with the Director of hospital.

These items are usually non-perishable items. They should be used ONLY in the case of a Major Disaster.

a. Serally numberd Plastic Folders

b. Action cards

c. Arm bands (DISASTER TEAM)

d. Transfusion fluids

Normal saline

5% Dextrose

Hartmanns Solution

Haemacel

Dextran

e. Giving apparatus

Giving sets

Venflon cannulae - various sizes

f. Disposable Syringes

2ml

5ml

10ml

20ml

50ml

g. Oxygen cylinders with apparatus for administration

h. Essential drugs

Morphine

Pethidine

Sodium Bicabonote -etc.

i. Dressings

Cotton wool

Gauze

Lint

Cotton bandages

Crepe bandages

j. Splints

k. Anaesthetic equipment

Suckers

Laryngoscopes

Endotracheal tubes - various sizes

Boyle's Machines

Anaesthetic gases - Oxygen, Nitrous oxide, Halothane

l. Intercostal drainage sets (Disposable variety preferred)

m. Under water seal bottles

n. Ambu bags

o. Subclavina catheters

p. CVP lines

q. Cut down sets

r. Foley's catheters

07. TRIAGE

Major accidents will cause a variable number of deaths depending on the nature and severity of the events but among the survivors the pattern is similar in virtually all cases that is there is relatively small number of patients with minor injuries.

The Triage office receives the casualties and allocates them to Triage categories and direct them to appropriate areas within the department .He must be a senior member of the staff usually a General surgeon.

Unless this procedure is carefully executed the patients most likely to be attended to first are the once making the most noise and these are very often the least severely injured.

This exercise is very important as a large number of patients are with minor injuries and once they are sorted out and sent to close by wards identified earlier for total care the relatively small number of patients requiring immediate or urgent medical care could be looked after well.

Triage officer will categorize the injured persons into

a. Critically injured

b. Seriously injured

c. Slightly injured

d. Dead- as the case may be

It is important that the Triage officer does not undertake to treat the patients as this would compromise his main task.

The medical officers in the respective areas will complete the Admission form and carry out examination, investigation and treatment in the respective areas of the OPD.

A nurse in the Reception area will tie the approprite arm band on the patient together with the identification tag. A medical officer assisting the Triage officer will write the name of the patient on the admission sheet. If the name is not available the serial number should be recorded.

Critically injured patients are sent to the Resuscitation Room or ICU.

Serious injured patients can be sent to the wards and later to the Operating Theatre if necessary.

Slightly injured patients can be sent to nearby wards for treatment .These wards should not be necessarily surgical wards. These wards should have a disaster cupboard with all essential items for treatment of minor casualties.

The dead will be sent to the mortuary.

Special attention must be paid regarding safety of patients' property. The hospital management will have to face problems later if patients' property is not looked after properly.

08. DOCUMENTATION

8.1 Serially numbered plastic covered folders should be available in the disaster store room.

Each folder will have the following.

a. Arm tag which carried the same serial number as the folder.

b. One OPD card

One treatment Sheet

Two continuation sheets

One X-ray request form

One Blood transfusion request form

Pins and Clips

8.2

It is important to have good record-keeping to answer inquiries from relatives who arrive in large numbers at the hospital. The clerks should ensure Registration of all cases with the co-operation of nurses assisting Triage Officer stationed in the reception area. It is posible to get the services of medical students or student nurses where they are available to collect further details from the patients after they are admitted to the wards.

A list of names and addresses of the victims should be prepared as quickly as possible and it must be displayed prominently at various points of the hospital.

09. SECURITY

Instances where the hospital has lost various surgical instruments (scissors, forceps, cut down sets, needle holders, etc.) used during a disaster are not uncommon. Therefore it is important that unwanted people are sent away from the accident department with the assistance of police and security staff. The members of staff who are involved in the activities of the Disaster Plan could be easily identified by the arm band.

Security must be tightened to prevent people damaging the hospital property and stealing things from the hospital.

10. REFRESHMENTS

It is importand that refreshments are served to the members of the staff who would be usually exhausted after this exercise. The AO/Secretary of the hospital should look in to this aspect.

11. TERMINATION OF ACTION

The Disaster Plan could be called off by the Director of the hospital or his Deputy in consultation with his superiors on the advice of the staff.

It will be prudent to arrange for periodic "DRILL" in the operation of the Disaster plan to inculcate the sense of urgency that is expected in the plan without sacrificing efficiency at all levels.

12. ACTION CARDS

DIRECTOR

a. Initiation of procedure, Request telephone exchange to carry out Disaster plan.

b. Alert command staff.

c. Alert police post.

d. Alert transport section.

e. Alert voluntary organisations.

f. Mobilize staff.

f.1. Medical staff.

f 2. Non Medical staff.

g. Distribute Action cards and arm bands.

h. Instruct AO to deploy non medical staff eg. clerical staff, telephone operators ambulance crew, overseers, cooks.

i. Communicate with Superiors, Law Officers and Press.

j. Ensure safety of patient property.

k. Ensure crowd control arrangements.

l. Make arrangements for the bereaved and sorrowing.

m. Be in constant communication with Triage officer.

SUPPORTIVE SERVICES

CHAPTER 12

QUALITY ASSURANCE OF PATIENT CARE SERVICES

1. INTRODUCTION

The Chamber's 20th Century Dictionary defines quality as 'The degree of Goodness or Excellence". With respect to Health Care, it concerns the degree to which the resources for Health Care (Health Workers, equipment, supplies such as drugs etc.) or the services included in Health Care (Antenatal Care, Natal Care, Postnatal Care, Care in the ICU etc.) correspond to specified standards. These Standards, if applied are expected to achieve good quality of care.

The concern for quality of patient care has a long and colorful history. For example, this Babylonian cuneiform text from 2000 BC sets out billing guide-lines as well as a penalty for incompetence :-

'If the doctor shall treat a gentleman and shall open an abscess with the knife and shall preserve the eye of the patient, he shall receive ten shekels of silver. If the patient is a slave his master shall pay two shekels of silver. If the doctor shall open an abscess with a blunt knife and shall kill the patient or shall destroy the sight of the eye, his hand shall be cut off."

The overall objective of Patient Care Services is to either cure the patient or ameliorate the illness to an extent which would enable the patient to continue treatment at home. To achieve this objective, the different components of patient care services in the secondary/tertiary care institutions, namely, Manpower, other facilities such as Intensive Care facilities, Operating Theatre facilities, Labour Room facilities and supplies such as equipment, drugs etc., should conform to accepatable standards (of good quality). At the same time, we must not forget that patients come from the community and some of the health problems they suffer from actually originate in their environment (for example, a patient with bacillary dysentery may have contracted the illness due to polluted water supply in the community). The services of the hospital should also lead to resolution of health problems in the community. This is by and large achieved by integrating curative care with preventive care by way of notification of notifiable diseases, hospital based health education, training of Primary Health Care staff in hospitals etc. While achieving these objectives, it is also necessary that the staff enjoy their work (job satisfaction) and patients and the community are satisfied with the care given by the secondary and tertiary care hospitals.

2. NEED FOR QUALITY ASSURANCE PROGRAMME

One may question why a developing country like Sri Lanka needs a Quality Assurance Programme and may even question whether the country can afford same. Good quality patient care would reduce mortality rates, the average length of stay, overcrowding which is the bug-bear of our secondary and tertiary care system and also conserve scarce resources (drugs, linen, money spent on patient diet etc.) which would help to stretch our meager budget. Good quality care would also by it's emphasis on prevention reduce the preventable morbidity & mortality in the community, thus improving the quality of the work force and helping socio-economic development of the nation. Overall, the quality of life of the nation would improve. From the point of view of our staff, good quality care would add tremendously to job satisfaction.

It is also, a social, legal and professional obligation on the part of the health staff to make every reasonable effort to ensure that care rendered to patients meets highest achievable standards of quality. This is particularly important at this point in time when litigation has started. The need for a Quality Assurance Programme is stressed in the National Health Policy.

3. BASIC ELEMENTS OF A QUALITY ASSURANCE PROGRAMME FOR PATIENT CARE SERVICES.

A Quality Assurance Programme requires the following :-

(i) An adequate legal framework setting standards and regulations to assure quality of manpower. equipment, drugs etc. used in patient care. The Medical ordinance stipulates the standards to practice as Doctors, Para Medical staff etc. The Nurses' Council Act specifies standards to practise nursing. The Cosmetics, Devices and Drugs Act specifies standards for drugs and equipment used in patient care.

(ii) An adequate framework of administrative guidelines. For example, the Manual on Management of Drugs sets out procedure to ensure availability of essential drugs. Part II of the Manual of the Department of Health Services lays down guidelines for the proper management of hospitals to ensure good quality care. The new Manual would update these guidelines in keeping with modern requirements to assure good quality patient care.

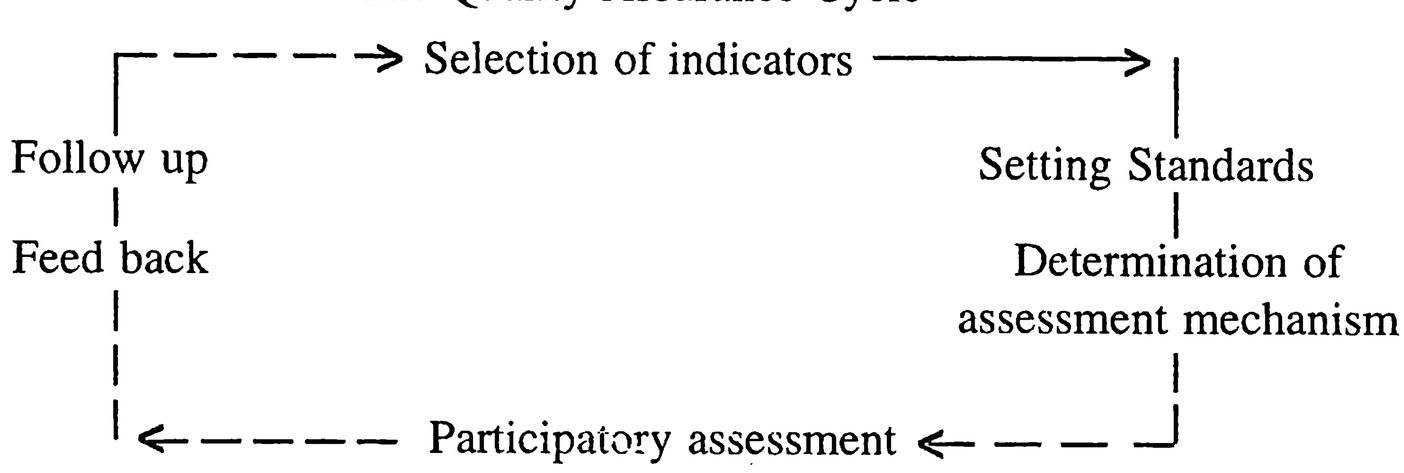
(iii) An enforcement mechanism to monitor and ensure adherence to standards. The traditional enforcement mechanism is inspections, by hospital administrators, provincial administrators and National Health Administrators.

When the basic elements are in place, the stage is set to launch the Quality Assurance Programme.

4. THE QUALITY ASSURANCE CYCLE (STEPS IN SETTING UP A QUALITY ASSURANCE PROGRAMME)

The programme essentially is a cyclical series of steps to be kept in motion to assure quality (Figure 1)

The Quality Assurance Cycle



5. INDICATORS

To indicate is to give some notion of, as for example, in the case of monitoring of the mother in labour which if properly done would be an indication of good natal care. This is also a pointer to how good the quality of care is. For example, the post - operative chart is a pointer to the degree of monitoring of the patient in the immediate post - operative period. It is also a quantitative measurement that can be used to assess and improve performance of important aspects of patient care, against the standard. For example, the accepted standard for post-partum monitoring is that the patient should be kept in the labour room for 2 hours and that the pulse of the mother, any bleeding PV, and the state of uterus should be monitored every 15 minutes and recorded. The record would indicate whether post - partum vigilance was maintained for 2 hours and how frequently the monitoring was done. Any shortfalls in the post - partum monitoring could thus be assessed and corrected.

Good indicators should be :-

i. **Relevant** - The cleanliness of toilets would indicate how good the efforts have been to keep it clean.

ii. **Valid** - they should measure what they are supposed to. For example, the coliform count would be a good indicator of the degree of faecal pollution.

iii. **Permit differentiation between high and low quality.**
For example, the availability or not of the 37 most essential drugs would be a good indicator as to the availability of drugs.

TYPES OF INDICATORS

Indicators may either measure the process, as for example, the assessment of antenatal mother on admission or the outcome as to what happens if the proper process is not followed. Good antenatal assessment would detect high risk mothers whereas they would be missed if the proper process is not followed.

THE PROCESS OF DEVELOPING INDICATORS

(i) First, the scope of care to be given is defined. For example, what has to be done for proper assessment of the mother on admission to the ward for delivery.

(ii) Out of the scope of care to be given, important aspects of care for which indicators are necessary are identified.

(iii) Preliminary set of indicators is selected.

(iv) These indicators are measured against characteristics of good indicators.

(v) The indicators are reviewed and finalised by consensus of a group of experts.

Once the indicators are selected the stage is set for selection of standards for each indicator.

6. STANDARDS

Standards are specific values for indicators forming the basis for assessment of quality and serve as a measure for comparison of the quality over a period of time, between institutions in Divisional Director's areas, Deputy Provincial Director's areas, Provinces etc. For example, the completeness of the morbidity mortality register is one indicator of quality of patient records. The standard being, it should be complete up to the week before assessment.

Following are some characteristics of good standards :-

(i) Should have a scientific basis in that, it's application should ensure effectiveness of care. For example, the standard for monitoring of foetal heart sound during labour is, it should be done every 15 minutes and the rate recorded. This would ensure early detection of foetal distress.

(ii) It should be relevant to the region or the situation. For example, in a situation where printed forms are scarce, it would be futile to insist that inpatient records must be maintained using a BHT, continuation sheets, temperature charts, drug sheets, Nurses observation charts etc.

(iii) Realistically measurable and implementable. For example, the degree of patient satisfaction expressed as a percentage will be extremely difficult to

measure. Availability of all essential drugs for the level of institution 100% of the time cannot be assured in a developing country.

(iv) Should be reviewed and changed as necessary from time to time. For example, in the situation with very poor notifications, the initial standard may be to achieve 50% notification of sentinel bowel diseases such as Typhoid and Bacillary dysentery. Once some headway has been made in notification, the standard my be raised, say, to 75%.

The range and number of standards are a matter for consensus at a meeting of experts. A rule of thumb for a realistic level of performance would be, that achieved by the most successful 25% of that category of hospital. Once standards are set, a mechanism has to be evolved for assessment of quality.

The standards should be known to the relevant members of the staff who are involved in the particular aspect of care.

7. MECHANISM OF ASSESSMENT

Four main mechanisms are used to assess quality :-

(a) Routine recording and reporting procedures. For example, the percentage of undiagnosed cases can be obtained from the morbidity mortality returns sent to the medical Statistician.

(b) At inspections, using a check list of indicators and standards.

(c) As special studies which may include patient interviews.

(d) A combination of above.

Whatever the mechanism, the staff should take part, to some extent in assessment of quality (participatory assessment). The experience will enhance their appreciation of the factors contributing to Quality Assurance.

The purpose of assessment of quality is to improve efficiency of patient care and health programmes. For example, the assessment of quality of natal care will show up accomplishments as well as weaknesses, which could be corrected, leading to better quality natal care which will improve the Maternal & Child Health Programme.

For the purpose of comparison of quality between different times in the same institution, between institutions and regions, quality has to be quantified. For example, the percentage of sentinel bowel diseases notified could be used for the purpose.

Let us say that in the month of January, the notification was 70%. In the month of December, it may be 80%, thus showing an improvement.

8. FEED BACK AND FOLLOW UP

Once assessment is made, the results must be fed back to the persons concerned and follow up action taken to ensure that deficiencies pointed out have been corrected and that standards are being adhered to. In participatory assessment such as at inspections, the quality of care as assessed is known to all concerned on the spot. Guidance can also be given on the spot, to correct deficiencies. The progress report in response to inspection notes will contain action taken to correct deficiencies. The progress report is vital for follow up, which forms an important part of any inspection.

9. REVIEW OF INDICATORS AND STANDARDS

The Quality Assurance Cycle is reset in motion at periodic intervals by review of indicators and standards. This is necessary to cater to changing conditions and aspirations. For example, in a situation where health education activities are poor, initial standard could be recording of health education in the Maternity Unit. Once this has picked up, the standards could be reset to include the other sections. If the quality of care of original indicators appears to be reasonable (example, completeness of morbidity mortality register), this item could be substituted by another which has come up as a new problem area.

10. THE EVOLUTION OF THE NATIONAL QUALITY ASSURANCE PROGRAMME

The National Quality Assurance Programme was initiated in 1988 with two pilot projects. These two pilot projects and the philosophy of the quality Assurance Programme were discussed with Regional Directors of Health Services in 1989 and the first-ever Quality Assurance Programme was formulated at a National Consultative Meeting held in December 1989. The next phase of the programme was pilot projects in selected Teaching & Provincial Hospitals and

phased extension of the programme to other hospitals in Provinces. The next phase was the review of the National Programme which was conducted in 1993 at Kurunegala. In the first programme, 32 sets of indicators and standards were selected and in the implementation it was found that these were too many for a fledgling Quality Assurance Programme. At the review, it was decided to concentrate on five critical areas and re-formulate indicators and standards for these areas. The areas are :-

(i) Intensive Care

(ii) Operating Theatre

(iii) Maternity Care

(iv) Pediatric Care

(v) General Sanitation.

The new programme is pitched at the level of secondary and tertiary care institutions.

INDICATORS & STANDARDS FOR SECONDARY & TERTIARY CARE INSTITUTIONS

INTENSIVE CARE UNIT.

Indicator	Standards
Admission policy	Normal admissions by Consultant I. C. ICU. Emergency admissions by MO, OPD / SHO / HO, in consultation with consultant IC.
Discharge policy	Consultant Anesthetist / Consultant in-charge ICU.
Medical Care	(a) Medical officer available in ICU round the clock. (b) All admissions examined on admission.
Nursing Care	One ICU trained nurse per patient.
Physiotherapy Services	Round the clock availability of a physi-otherapist.

Inward X-ray & Drug Facilities	Available round the Clock
Equipment	ECG monitor per bed. Functioning Ventilator per bed. Sphygmomanometer per bed. Pulse Oximeter per bed. Blood gas analyser for ICU. Electrolyte analyser / ICU.
Power supply	Availability of standby generator
Therapeutic Care	Availability of essential drugs and buffer stock of even local purchase items. Availability of an antibiotic policy.
Patient records	Observation charts of vital signs, temperature chart, drug chart, fluid balance chart.
Infection Control	Hand washing between patients with disinfectants. Changing into ICU clothes and shoes on entering ICU. Changing of tracheotomy tubes and endotracheal tubes once a week. Changing of venflon canulae once in 2 days. Sputum culture & ABST once in 3 weeks in patients with Tracheotomy / Endo tracheal tubes. Urine culture & ABST weekly in patients with urinary catheters Tips of used tracheotomy / endotracheal tubes / urinary catheters for culture ABST. Samples from suspected Hepatitis B & AIDS labelled in red & Lab informed by telephone prior to sending of specimens.
Complications	Absence of bed sores, parotitis, Hypostatic pneumonias, corneal ulcer.

OPERATING THEATRE SERVICES

Indicator	Standards
Sterility	Post operative wound infection less than 2%. 100% of cultures from instrument trolleys

	and linen trolleys sterile. 90% of cultures from floor, table, table, over-head light sterile.
Efficiency	80% of lists start at scheduled time and run without interruption.
Thermal comfort	Air-conditioning working 100% of time.
Asepsis	All staff change into theatre linen on entry. Patients taken on separate OT Trolleys Legging and caps for every patient. Autoclaved packets of instruments for each operation.

PEDIATRIC CARE

Indicator	Standards
Morbidity & Mortality	Apgar score recorded at birth. Neonatal examination by MO. Resuscitation of new born by trained staff.
Mortality rate in Neonatal Unit	Maintain baby and room temperature at optimum level. Monitoring of babies hourly. Regular breast feeding of babies by mothers. Rooming in mothers.
Length of stay and mortality	Stamped cases to be examined by HO within 15 minutes and others within one hour. Availability of results of following investigations in 2 - 4 hours :- (a) Blood sugar (b) Cerebro spinal fluid (c) Blood urea (d) Blood group & DT.
Control of Communicable Diseases	Notification of all notifiable diseases Isolation of patients.

Follow up care	Regular follow up by appointment. Availability of essential drugs for clinic patients.

MATERNAL CARE.

Antenatal Care	All referred cases seen by Consultant. 100% immunization of mothers against Tetanus. One Health Education session per clinic.
Inward Care	Stamped cases to be seen within 15 minutes. Non stamped cases to be seen within one hour. Complete medical examination on admission. Recording of vital signs - height, weight, FHS, HB, urine for albumin and sugar on admission. All inward patients seen daily by H. O. before 12 noon. All high risk mothers seen by Consultant daily.
Natal Care	Detection of all mothers at onset of labour. Preparation for labour Monitoring of FHS, Pulse, every 15 minutes. Partogramme for necessary cases. Early identification of obstructed labour, Inefficient uterine contraction, Foetal distress. Prevent PPH by active management of third stage where necessary. Breast feeding within half an hour of birth.
Post natal Care	Pulse, State of uterus and bleeding monitored every 15 minutes during first 2 hours. Individual education of mothers regarding breast feeding, immunization, hygiene. Referral of baby to well baby clinic.

SANITATION

Indicator	Standards
Cleanliness of toilets	Washed 4 times per day and as necessary. 4 a. m. - p. m. 6.30 a. m. - 7.30 a. m. 1 p. m. - 2 p. m. 6.30 p. m. - 9.30 p. m. OPD toilets 2 hourly during day time.
Cleaning of cobwebs.	Weekly in wards, twice weekly in LR & OT.
Cleanliness of drains	Washed twice a day between 7.30 a. m. - 8 a.m. 2 p. m. - 2.30 p. m. Operating Theatre drains to be cleaned 6 times per day between 7 a. m. to 8 a. m. 11 to 11.30 a. m. 1.30 to 2 p. m. 4 p. m. to 4.30 p. m. 6.30 to 9.30 p. m. 5 to 6 a. m.
Cleanliness of floor	Ward floor to be mopped twice a day. OT floor to be mopped after each routine / casualty case with antiseptic. ICU to be mopped twice a day. Washing - weekly on same day for wards. Labour room to be washed twice a day. OT to be washed every day in the night. ICU floor to be washed once a week. OPD floor to be washed once a week.
Cleanliness of linen	(i) Laundered linen to be delivered once in 3 days to the wards, once in 2 days to the OT, 3 times a week to ICU.
Changing of Linen	(i) With every patient.

Refuse disposal	(i) Dustbins to be emptied and at least twice a day. Between 8 to 9 a. m. and 1.30 p. m. to 2.30 p. m. (ii) Sharps to be burnt every second day.

CHAPTER 13

MANAGEMENT OF THE BLOOD BANK

8.1 INTRODUCTION

The National Blood Transfusion Service (NBTS) which is a Specialized Campaign in the Ministry of Health, has a Central Blood Bank (CBB), 33 Regional Blood banks (RBB) and 14 Emergency Bleeding Centres (EBC).

The CBB which is situated in the premises of the General Hospital, Colombo attends to the blood and blood component requirements and undertakes serological investigations of the General Hospital, Colombo including the Accident Service, and the De Soysa Maternity Hospital including antenatal Serology for the hospital. Almost all the blood requirements of the Lady Ridgeway (Children's) Hospital and some of the requirements of the other hospitals in the country are also provided from the Central Blood Bank through their respective RBB and EBC, mostly in time of emergency. All the ABO blood grouping and Coomb's reagents for the NBTS are produced at the CBB. The CBB also procures and supplies equipment, consumable items, stationery and reagents for all the institutions in the NBTS, and monitors their work performance monthly. In addition, the CBB serves as a Training Centre for medical, technical and nursing officers appointed to the NBTS and for their undergraduate and post-

graduate trainees. Postgraduates reading for diplomas and doctorates in Pathology also receive training at the CBB.

The RBB which are situated in the larger hospitals attend to the blood requirements for the respective hospitals and undertake serological investigations including antenatal serology. 8 of these RBB currently have facilities for the preparation of all the blood components and a further 17 RBB have facilities for the preparation of some of the blood components.

The EBC which are situated in the smaller hospitals have most of the facilities available at the RBB with the exception that staff are part - time (hospital staff) who have trained at CBB, and provide the blood requirements of their respective hospitals.

8.2 Objectives of Management of Blood Banks

The main objectives of the management of a Blood bank are :

(a) to provide blood and where facilities are available blood components which are as safe as possible, in adequate quantities to prevent morbidity / mortality from failure to transfuse in time, and to prevent as far as possible the transmission of transfusion associated diseases such as Hepatitis B, Human Immune Deficiency Virus (HIV/AIDS), Malaria and syphilis infections, by testing the blood prior to transfusion. It must be stressed the risk of transmission of HIV/AIDS infection cannot be totally eliminated by testing blood for the HIV antibody as a blood donor may donate blood in the 'window period' when the antibody test will be negative, but the blood will contain the virus.

(b) To prevent morbidity / mortality from transfusion accidents due to serological incompatibilities by using the recommended techniques for blood grouping of patients and donors, and for compatibility testing.

8.3 Organizing Blood Donations at Institutions, mass programmes

(a) At institutions

(i) Replacement Donations

Medical and nursing officers in wards must be informed to request relatives and friends of patients to donate blood at the Blood Bank of the hospital as

and when patients who may require blood are admitted to the hospital. They must be given a note (a form may be cyclostyled & kept in the wards) with the name of the patient, the ward number and the quantity of blood required for the patient. As all the blood that is donated is usually not used for these patients, this would be a steady source of blood that can be kept in stock for emergencies.

(ii) Voluntary Donation

The Medical officer - in - charge of the Blood Bank could arrange with local organizations such as the Police, Lions Clubs, Commercial and Government establishments to send donors to the Blood Bank whenever the stocks are low. The employees of some of these institutions could be blood grouped and a register maintained at the Blood bank and at the Institution for call - up when blood of a particular group is required.

(iii) Rare Blood Groups

As only 4.66% of the population of Sri Lanka is Rhesus negative, whenever a blood donor is found to be Rhesus negative his / her name and address must be entered in the Rhesus Negative donor register which must be maintained at each Blood bank, for call - up in an emergency. The names in the register must be entered in 4 different sections depending on the ABO blood group i. e. O Rh negative, A Rh negative, B Rh negative and AB Rh negative.

(b) Mass Programmes

(i) Central Blood Bank.

The public Relations Officer (PRO) who is the head of the Donor Recruitment Division of the Central Blood Bank which has 4 Mobile Unit Teams must arrange as many field blood donation programmes as are necessary (currently 40-50 programmes per month) to maintain an adequate stock of blood to provide the blood required for the General Hospital, Colombo including the Accident Service, the De Soysa Maternity Hospital and the Lady Ridgeway Hospital in addition to maintaining an adequate stock of blood to cope with an emergency that may occur in any part of the country. These programmes must be arranged in advance for one month and a programme cyclostyled and mailed to all the organizers of the programmes to the MOH and to the Medical officer / Nurse - in - charge of the RBB & EBC in the area.

(ii) Regional Blood Banks

The Medical Officer - in - charge of the RBB where facilities and staff are available for Mobile Unit Programmes, must arrange monthly or weekly pro-

grammes with local organizations/ institutions which are nearby, if the blood collection at the institution is insufficient to maintain an adequate stock of blood. Long distance mobile units are not recommended, until refrigerated vehicles can be provided for the RBB. Assistance can be obtained form the PRO, CBB to arrange such programmes.

All blood donors irrespective of whether they are voluntary or replacement donors must be given a donor booklet which is not only a record of their blood donations, but also entitles them to priority of treatment at government hospitals and priority of blood stocks for the donor and his immediate family members for one year after each donation.

Gifts to blood donors by organisers of these blood donation programmes as well wishers must be discouraged, as this would interfere with donor selection and jeopardise the safety of the blood supply. However a snack and a drink in addition to the coffee / tea provided by the Blood Bank may be allowed.

8.4 Screening of Donors

Screening of blood donors must be done in accordance with the 'CRITERIA FOR SELECTION OF BLOOD DONORS' Circular No : 1 dated 30th April 1985 by Director, NBTS (Annex 1).

Blood must be collected only from voluntary non - remunerated donors, and care must be taken to detect a 'hidden' system (common to most developing countries) where blood donors recruited by relatives of patients as replacement donors are paid by them., a system which sometimes occurs in Sri Lanka too. If there is any suspicion that the donor is not a relative or a friend of a patient, but is being paid to donate blood, he must be rejected and if this is not possible, the blood donated by this donor must be labelled 'high risk' and the blood discarded (confidential unit exclusion), and blood provided from the stocks for the patient. Similarly, blood of seamen (sailors), prisoners, donors who have been to an African country after 1977, donors who have been abroad in the past 10 years and foreigners must not be transfused even if tested for anti - HIV (and other transfusion transmissible diseases) and found to be negative as they represent high risk groups for HIV/AIDS infection and could be in the "window period". When such donors are rejected blood must be provided from stocks for the patient if they are replacement donors, in accordance with Confidential letter No. EB/215 of 25.10.91 circulated by the Director, NBTS (Annex 2)

All donors must be given the pamphlet on AIDS entitled 'IMPORTANT MESSAGE TO BLOOD DONORS - AIDS" prior to registration which gives

them an opportunity for self exclusion, and if they read the pamphlet and leave, the donor must not be questioned. If a donor requires a clarification, a confidential interview must be arranged with the Medical officer, and if there is no Medical officer with the nurse - in - charge. All donors are also required to sign a Certificate of Fitness, declaring that they have not had any illnesses mentioned in the certificate including a statement declaring that they have read the pamphlet on AIDS and do not belong to a high risk group mentioned there in (Annex 3).

At the time of registration the Public Health Inspector / Nursing Officer who registers the blood donor must write clearly on the register the name, full address, age, sex etc. So that the blood donors could be traced for "Call-back" in case their blood is found to be positive for the HIV antibody or other tests for a transfusion associated disease.

8.5 Adherence to Aseptic Precaution

Prior to registration of the blood donor, the finger has to be pricked to test for the Haemoglobin Level and to make a blood film for examination for malaria parasite for which only sterile disposable lancets must be used.

The blood collection area (bleeding room) must be kept clean, neat and tidy and the sheets on the beds must be changed regularly. The donor's forearm must be prepared by cleaning with savlon, spirits and iodine and spirits must be applied over the prominent veins. The area which have been cleaned must be covered with sterile gauze until the time of venepuncture for blood collection.

Only sterile disposable syringes and needles must be used to inject local anaesthetic prior to venepuncture for blood collection, which must be done only by a medical officer. The cover of the needle attached to the tubing of the blood bag must be removed by the medical officer just before venepuncture to prevent contamination.

Lancets, syringes and needles used for blood collection are disposable, and must never be re-used even after adequate sterilization. The medical officer / Nurse - in - charge of the RBB/EBC must ensure that these items are obtained from the CBB together with the other requirements on a monthly basis.

8.6 Screening of blood.

All blood that is collected must be screened for the following transfusion associated diseases prior to the transfusion.

*a) Hepatitis B (Hepatitis B surface Antigen - HBsAg)

*b) HIV/AIDS (antibody)

c) Syphilis (VDRL test)

d) Malaria parasite (Direct Microscopy)

* Test Kits must be obtained from the CBB.

(a) Hepatitis B - If blood of a donor is found to be positive for Hepatitis B by the Reversed Passive Haemagglutination (RPHS) test which is used for screening at RBB/EBC the unit must be discarded, and a sample of serum from the donor sent to the CBB in a labelled bottle for confirmation by Radio immunoassay (RIA). If a sample is confirmed as positive by RIA, the medical officer / nurse - in - charge of the RBB/EBC will be informed. He / She must then write to the blood donor and request him/her to refrain from donating blood again. The donor must also be requested to attend a medical clinic at the nearest hospital for further investigations.

(b) HIV/AIDS - If blood of a donor is found to be positive for HIV antibody **the blood must not be transfused** even if a repeat test by the same technique or another technique is found to be negative. A sample of blood taken from the unit with adequate precautions must be sent to the Anti V. D. Campaign Lab. and the unit of blood discarded strictly in accordance with the instructions in the Confidential letter no: EB / 215 of 30.1.1993 by Director, NBTS which has been sent to every RBB/EBC (Annex 4). if the sample is confirmed as positive, the anti - V. D. Campaign Lab. will inform the AIDS Control programme to trace the donor and contacts. **The RBB/EBC must not inform the donor or the patient, and blood must be provided from stocks if it was a replacement donation.**

c) Syphilis - if blood of a donor is found to be VDRL positive, the blood must not be transfused even though the VDRL test is not a specific test for syphilis and it is possible that this is a false positive. However the anti V. D. Campaign will do the specific (Treponema Palladium Haemagglutionation - TPHA) test and follow-up and treat the donor. **The RBB/EBC must not inform the donor or the patient, and blood for the patient must be provided from stocks if it was replacement donation.**

(d) Malaria : A thick and thin blood film must be made by the officer registering the donor and the slides sent together with a list containing

particulars of the donor to the nearest Anti-Malaria Campaign or to the Pathology Lab. of the hospital for examination for Malarial parasite. If a donor is reported as positive for malaria parasite the blood must not be transfused to a patient. The medical Officer/Nurse in-charge of the RBB/ EBC must write to the donor and refer him/her to the nearest hospital for treatment.

8.7 Blood grouping, compatibility Testing and Antenatal Serology

(a) Blood Grouping

(1) **ABO grouping** - on blood of patients and donors must be done using the method described in Procedure 1 of the Technical Manual of the NBTS prepared by the Director NBTS in 1989 and sent to the RBB/EBC. Both cell and serum grouping must always be included to prevent errors in blood grouping that could result in transfusion accidents which may even be fatal to the patient. The preparation of A cells and B cells for serum grouping is described in Procedure 4 in the Technical Manual. Blood Grouping must only be done in test tubes. Slide grouping must never be done as errors in ABO grouping are very common in the slide test.

Blood grouping in special cases where washed cells must be used is described in Procedure 3 in the Technical manual.

(ii) Rhesus Grouping - Rhesus (D) grouping on blood of patients and donors is described in Procedure 1 of the Technical Manual. Further tests for the CD&E antigens (using anti-CDE) and for the D variant (using anti - D) which must be done to establish Rhesus negativity on a unit of donor blood is described in Procedure 2 of the Technical Manual. **A unit of blood must be labelled as Rhesus negative only if it is found to be negative when tested with anti-D, anti-CDE and D test, to prevent Rh antibodies being formed in the patient following blood transfusion.**

(b) Compatibility Testing (Crossmatch)

All requests for blood and blood components must be sent to the Blood bank on the special form (Annex 5).

Only group specific blood must be crossmatched for all routine blood transfusions. The saline and albumin techniques and the Indirect

Coombs test must be done with every crossmatch and the incubation time is one hour. In case of emergencies, the technique may be varied and the incubation time reduced to 20 minutes. The routine and emergency crossmatch are described in Procedure 5 of the Technical Manual.

In emergencies group compatible blood may be crossmatched if group specific blood is not available. The groups may be selected as described in procedure 6 of the Technical Manual. When group specific blood is not used for transfusion, the respective hemolysin test must be done on the unit of blood (pilot sample as suggested in procedure 6, of the blood) is transfused as whole blood. The Hemolysin Test is described in Procedure 9 of the Technical Manual. If it is not necessary to do the hemolysin test when group compatible blood is transfused as red cell concentrates (packed red cells).

The procedure for crossmatching in cases of autoagglutination in the patient is also given in Procedure 6.

(c) Antenatal serology.

Blood grouping of antenatal patients sent from antenatal clinics must be done at the RBB. At least 2ml of blood must be sent in labelled bottles together with request forms or a list with the patients name, clinic number etc. in duplicate, so that the blood groups could be entered and one copy of the list returned to the clinic and the other copy filed at the RBB.

Rhesus antibody screening on Rh negative antenatal patients is done at the Central Blood Bank using a commercial cell panel. A panel of cells for antibody screening is now being prepared at the CBB and is sent to the larger RBB for antenatal serology. The other RBB could screen for Rh antibodies using group O Rhesus genotyped cells as described in Procedure II of the Technical Manual. Rhesus genotyping is in Procedure 7 of the same manual.

If an antibody is detected a sample of 2-3 ml of serum must be sent to CBB for identification of the antibody as the Identification cell panel (Commercial) is available only at CBB. When the antibody is identified, an Rh antibody titre will be done at CBB and the report sent to the RBB. Thereafter serial antibody titres could be done at the RBB using group O Rhesus genotyped cells using Procedure 13 of the Technical Manual.

8.8 Issue & Transfusion of Blood and Blood Components.

(a) **Issue** - When blood or blood components are required for a patient, the Bed Head Ticket BHT (or at least the 1st page of the BHT) must be sent together with the Compatibility Report (for whole blood, red cell concentrate, washed red cells, leucocyte poor blood and white cell concentrate) or an availability report for the other components (platelet concentrates, fresh frozen plasma, cryo - poor plasma, single donor plasma, and cryoprecipitate) together with a cool container or a rigifoam box for transport. The nurse at the CBB/RBB/EBC must select the unit reserved for the patient, check the particulars on the compatibility / availability report with the compatibility label on the blood bag (for whole blood and components which have been crossmatched) and the BHT and enter the particulars of the patient and donor including the blood bag number etc, in the Blood Issue Register and issue the blood to the officer who comes for it from the ward together with a blood administration set for which they are required to sign. The medical officer on duty a the CBB, when on duty at the RBB must check the unit of blood with the report and the BHT and sign the BHT.

(b) **Transfusion** - When the blood/blood component is taken to the ward, the House Officer who gives the transfusion must identify the patient and check the above details before starting the transfusion to ensure that the correct unit of blood/blood component is being transfused to the patient.

The house officer must stay by the patient for at least 20 minutes and stop the transfusion if there is any reaction. if a reaction occurs at any time during the transfusion, the transfusion must be stopped immediately and 5ml of blood (post - transfusion sample) drawn from the patient and sent in a clean dry labelled bottle with a Transfusion Report form which gives particulars of the patient and the type of reaction etc. and the blood bag and transfusion set stili attached to the bag, to the Blood bank of the hospital.

The Medical officer on duty at the Blood Bank must trace the Blood request form and the pre-transfusion sample, investigate the reaction and fill in a Reaction Investigation Form (annex 6) which must be filed with the other documents. Every transfusion reaction however mild, must be recorded and investigated.

8.9 Monitoring

The work performance of all the RBB/EBC are monitored on a monthly basics by the Director, NBTS. The Medical Officer/Nurse -in-charge of every RBB/EBC fills up a Monthly Returns form provided for the purpose (annex 7). Blood Component preparation of the RBB that have facilities for the preparation of all or some of the blood components are also required to provide statistics monthly on another form (annex 8). The monthly requirements of consumbles, reagents etc. are sent to the RBB/EBC after studying these forms.

8.10 Prophylactic Maintenance of Equipment

(a) Blood Storage Refrigerators (Jewett)

A temperature of 4°-6°C must be maintained at all times. The temperature must not be below 2 C or above 8 C.

Three models of Jewett refrigerators are available in the NBTS.

(i) Jewett BBR25 model - this is the largest model with a capacity for storage of 360 blood bags. This model is currently available at CBB & one RBB.

This refrigerator has a temperature chart, a built - in alarm system and an electronic temperature indicator. There are two sensors - above the top shelf and the lowest shelf.

(ii) Jewett BB 2 Model - this large refrigerator has a storage capacity of 180 blood bags. This model is available at the CBB and several RBB.

(b) Microscope - It is important to ensure that the microscope is in working order and the bulb in the built - in lamp is not fused. A spare bulb must be kept in stock in case the bulb is fused. The microscope must be cleaned regularly to ensure that there is no blood on the lenses and on the stage.

(c) **Deep Freezers** - Two types of deep freezers are available at the CBB/RBB.

(i) USHA freezer - This freezer must be maintained at - 3O° - C and the temperature must be checked with a low temperature thermometer which may be obtained from the CBB.

The freezer must be defrosted regularly.

(ii) Deep Freezer (Large) for snap Freezing - this freezer must be maintained at - 60° and temperature checked with a low temperature thermometer. The freezers must be defrosted whenever there is a build up of ice.

(d) **Refrigerated Centrifuge** - Available at CBB & RBB. The Medical Officer / Medical Lab. Technologist must ensure that the instrument is in working order with regard to temperature and speed. (refer Technical Manual for Blood Components for temperature & speed for preparation of each of the blood components).

(e) **Dielectric Sealer** - Available at CBB and at the RBB. The MLT/ Nurse on duty must ensure that the instrument is switched on just before use and switched off after use, The blood from the instrument must be cleaned regularly.

(f) **Plasma Extractor** - Available at CBB and all the RBB. It must be cleaned regularly.

(g) **Platelet Agitator** - Must be switched off when there are no platelet bags. It must be cleaned regularly.

(h) **Hot Air Ovens** - Available at CBB and all the RBB. This instrument must be used during the day and switched off in the evening.

If any of the above equipment is out of order, the MO/Nurse in the RBB/EBC must telephone Director NBTS or SMO/CBB, who will request the Director, BES or local agent to effect the repair as early as possible.

This refrigerator has a temperature chart and an alarm system, and one temperature sensor above the top shelf.

(iii) Jewett CT 1 Model - This is the small model and has storage capacity of 60 blood bags. This model is available at the CBB and all the RBB & EBC.

This refrigerator has an alarm system and a temperature sensor above the top shelf

The temperature of these refrigerators must be checked regularly the nurse on duty and blood transferred to another refrigerator if the tempera-

ture remains above 8° C for over 4 hours. The Sister/nurse - in - charge must ensure that the temperature chart is changed once a week and the charts marked with the refrigerator number and filed. The bottles with the sensors must be checked for water level and water added once a month.

The refrigerators at CBB must be serviced once in two months. In view of the high cost the Jewett refrigerators at the RBB and EBC may be serviced whenever there is a repair. If the repair is done at the RBB/EBC and not in the workshop the Medical Officer/Nurse must instruct the local agent to service all the Jewett refrigerators at the RBB/EBC.

(b) Household Refrigerators

The CBB, all the RBB and most of the EBC have a household refrigerator for storage of reagents and samples of blood.

Blood for transfusion must not be stored in these refrigerators.

The nurse - in - charge must ensure that these refrigerators are defrosted regularly.

(c) **Centrifuge** - The medical officer / nurse - in - charge / Medical Lab. Technologist must ensure that the centrifuge is in working order.

The buckets must be removed and cleaned daily to prevent blood and pieces of broken glass from accumulating.

(d) **Waterbath** - The temperature must be maintained at 37 °C. In models that have no built - in thermometers a thermometers must be kept in the laboratory and the temperature checked regularly. The water level must be checked every morning by the nurse - in - charge / MLT and water added to the required level if the level is low.

8.11 Equipment Norms

The main items of equipment at the CBB/RBB/EBC are as follows :-

A. CBB

(1) Blood Storage (Jewett) Refrigerator

(2) Centrifuge

(3) Water bath

(4) Microscope

(5) Deep Freezer

(6) Refrigerated Centrifuge

(7) Dielectric Sealer

(8) Plasma Extractor

(9) Platelet Agitator

(10) Hot air oven

(11) Autoclave

(12) Coagulometer

(13) Inverted Phase Microscope

(14) Fluorescent Microscope

(16) Cell dotter

(17) Seromat (Serum dispenser)

(18) Minifuge (small refrigerated centrifuge)

(19) Laminar flow Cabinet

(20) PH meter

(21) Ultrasonic Disintergrator

(22) Water distiller

(23) De-ionised water distiller

(24) Gamma Scintillation Counter

(25) Liquid Scintillation Counter

(26) Apheresis System.

B. RBB/EBC

(1) Blood storage (Jewett) Refrigerator

(2) Centrifuge

(3) Waterbath

(4) Microscope

(*5) Deep Freezer

(*6) Refrigerated Centrifuge

(*7) Dielectric Sealer

(*8) Plasma Extractor

(*9) Platelet Agitator

(10) Hot Air Oven

* Only in Blood Banks with Blood Component Laboratories.

8.12 Staff Norms

A. CBB

1) Director
2) Senior Medical Officer
3) Medical Officer
4) Senior Medical Lab. Technologist
5) Medical Lab. Technologist
6) Sister - in Charge
7) Nurse - in - Charge
8) Staff Nurse
9) Chief Clerk
10) Clerk
11) Typist (Sinhala)
12) Store Keeper
13) Planning & Programming Officer
14) Public Relations Officer
15) Public Health Inspector
16) Cinema Operator
17) Driver.
18) Attendant
19) Labourer
20) Lab. Orderly
21) Substitute

B. RBB/EBC

1) Medical Officer - in - charge
2) Medical Officer
3) Medical Lab. Technologist
4) Nurse - in - charge
5) Staff Nurse
6) Attendant
7) Labourer
8) Substitute

ANNEX 1

CIRCULAR NO. 1

Criteria for Selection for Blood Donors

1. **Age** 18 to 55 years

2. **Weight** : Male 95 to 110 lbs - 250 ml Unit
   Over 110 lbs. - 500 ml Unit
   Female 95 to 120 lbs - 250 ml Unit
   Over 120 lbs - 500 ml Unit

3. **Haemoglobin Percentage** : 80% and over (12 grams per 100 ml) using the Copper Sulphate Method. The Specific gravity of the Copper Sulphate Solution Should be 1.052

4. **Blood Pressure** : Systolic Pressure - 100 to 180 m of mercury
   Diastolic Pressure - 70 to 100 mm of mercury

5. **Previous blood Donations** : Do not bleed within 3 months of the last donation.

6. **Alcoholic** : Those under the influence of alcohol at the time of examination should be rejected.

7. **Tattoos** : Should not be bled within 6 months of the date of tattooing or acupuncture.

8. **Pregnancy** : Do not bleed if pregnant and within one year of delivery.

9. **Dental Surgery** : Do not bleed within 72 hours of a dental extraction.

10. **Infected wounds** : Do not bleed if there is an infected wound even if the wound is very small.

11. **Surgery** : Major surgery - Do not bleed for 6 month, minor surgery 3 month

12. **Epilepsy & Frequent Fainting Attacks** : Reject

13. **Viral Hepatitis** : Do not bleed a donor who has had jaundice at any stage of his/her life.

14. **Allergies** : Bronchial Asthma and Hay Fever, Drug Allergy - Do not bleed.

15. **Heart Diseases** : Reject all donor who give a history of heart diseases and those who have valvular murmurs.

16. **Typhoid** : Do not bleed within 2 years of an attack

17. **Syphilis** : Reject unless serologically negative after successful treatment.

18. **Unexpected Weight loss** : Donors who give a history of recent and unexpected weight loss of 10 lbs. or more should be rejected.

19. **Malaria** : If a donor has had malaria within the last 3 years he/she should be rejected.

20. **Tuberculosis** : Reject all donors who give a history of Tuberculosis or of a persistent cough with blood stained sputum.

21. **Heamorrhagic Disorders** : Do not bleed donor who gives a history of an abnormal bleeding tendency.

22. **Chronic Illnesses** — Like Rheumatoid Arthritis, Symptomatic Peptic Ulcer, Chronic uncertain colitis, Diabetes Mellitus, Chronic Liver disease, Chronic Kidney Disease, Carcinoma etc. are causes for rejection.

23. **Immunizations & Vaccinations**

Tetanus Toxoid Typhoid (TAB) Diphtheria Polio	}	Can be bled after 24 hours if free from Symptoms
Oral Polio Anti Tetanus Serum	}	Can be bled 2 weeks after Administration
Anti Rabies Vaccine	–	Can be bled one year after the last injection

24. **Medication** : The recipient of antibiotic should be deferred until 1-2 weeks after the last dose.

For Platelet Transfusion : Donor Should not have taken Asprin for the past 72 hours..

25. Flight Crew, Construction workers on high buildings or those operating heavy machinery should not be bled if they have to report for duty within 24 hours.

26. If the donor has received blood or blood products within the last 6 months he/she must be rejected.

ANNEX 2

Confidential

Medical Officer / Nurse - in - charge
Blood bank
Teaching / General / Base / District Hospital
.....

AIDS - ACQUIRED IMMUNE DEFICIENCY SYNDROME

Further to my Circular No. EB/215 dated 08.01.90 sent to you in early January 1990, it has been brought to my notice that blood donors are registered without questioning them about their occupation, although I have stated clearly in the above circular that blood must not be collected from the following high risk groups for AIDS.

(a) Seamen (Sailors)

(b) Prisoners

(c) Donors who have been to an African Country after 1977

(d) Donor who have gone abroad during the past 10 years.

(e) Foreigners

Another copy of my Circular No. EB/215 of 8.1.90 is annexed as a reminder. **You must ask the occupation from the blood donor and if you are unable to reject the donor without offending him/her, register the donor but write clearly on the blood bag in capital letters**

SEAMAN

PRISONER

AFRICAN COUNTRY

BEEN ABROAD

FOREIGNER

Do not transfuse this blood. Enter 'High Risk for Aids' on the Blood Issue Register and discard the unit of blood immediately after grouping. **Do not paste a grouping lable on the blood bag.**

If the blood donor has been rejected for the above reasons, blood must be given to the patient from stocks for which a blood reservation form must be given to the rejected blood donor. If your stock of blood is low, please obtain blood for these patients from the Central blood bank.

I also take this opportunity to remind you that the black and white handout on "AIDS" must be given to every donor with the coloured one, and ensure that the donor reads the black and white handout before he / She is registered.

All blood transfused to patients must be tested for anti - HIV and transfused only after the report is available and the test is negative.

Please bring the contents of this circular to the notice of all the Medical, Technical & Nursing officers who work full-time or part-time at the blood bank.

ANNEX 3

NATIONAL BLOOD TRANSFUSION SERVICE

SRI LANKA

CERTIFICATE OF FITNESS

To
The Director,
National Blood Transfusion Service,
Sri Lanka.

I, the undersigned .....
Name

of .....
Address

do hereby express my desire to donate blood and declare that I have not donated blood within the past three months and I have not had any of the following diseases :-

(1) Jaundice (including contact with a patient during the past 6 months
(2) Malaria (Within the past 3 years)
(3) Typhoid (Within the past 2 years)
(4) Abortion (Within the past 6 months)
(5) Venereal Diseases.
(6) Epilepsy (Fits)
(7) Heart Disease
(8) High Blood Pressure
(9) Stroke
(10) Diabetes
(11) Tuberculosis
(12) Cancer
(13) Kidney Disease
(14) AIDS/HIV infection

I also declare that I have read the leaflet explaining about AIDS and I do not belong to the high risk groups mentioned in the leaflet.

I agree to have my blood donation tested for HIV (the AIDS virus) and other infections.

.....
Signature of Donor.

Date .....

Time of Bleeding

Weight :..... Age :.....

Blood Pressure : ..... Hb% .....

.....
Signature of M. O.

Date : .....

ANNEX 4

CONFIDENTIAL

Medical Officer / Nurse - in - charge
Blood Bank
Teaching / General / Base / District Hospital
.....

AIDS - ACQUIRED IMMUNE DEFICIENCY Syndrome

The following instructions are issued to you after discussion with the Director, AIDS Control Programme.

1. If the HIV (AIDS) test done on donor blood by any technique using the test kits provided by the AIDS Control Programme through the NBTS is found to be positive or doubtful once, the **blood must not be transfused** even if a repeat test done by the same technique or by a different technique is found to be negative.

2. A Sample of 10ml of blood must be taken immediately through the tubing attached to the blood bag into a VDRL tube after wearing gloves, and the tube closed tightly with the rubber stopper. This sample must be sent to the anti - VD Campaign headquarters at De Saram Place, Colombo 10 in a vehicle. DO NOT post the sample. The sample must be labelled with a white sticker bearing the unit No: and the name of the blood donor. Details including the name and address of the donor, date and place of collection of blood, the test done by you and the result (e. g. positive or doubtful) must be entered on a separate sheet of paper, placed in an envelope addressed to the Microbiologist, Anti-V. D. Campaign Lab. De Saram Place, Colombo 10 and sent together with the sample. Also please instruct the person who brings the sample to ensure that the sample is handed over to the laboratory at the anti - V . D. Campaign headquarters. This lab. is open from 8 a. m. - 3.30 p. m. on weekdays and from 8 a.m. - 12 noon on Saturdays. It is closed on Sundays and Public Holidays.

3. **Do not put the unit of blood back in the refrigerator**. It must be discarded immediately as follows :-

Dig a pit at least 2 feet deep, sprinkle about 50 ml of 3.5% sodium hypochlorite into the bottom of the pit, place the blood bag and your gloves over

the sprinkled area and cover the pit with earth. **This must be done under your personal supervision.**

4. Please keep your test results confidential. Do not inform the blood donor, patient or anyone else. Blood for the patient must be provided from your stocks, so that the patient will not know that the blood donated by his/her donor was discarded. The anti-V. D. Campaign will trace the donor and do the needful if the confirmatory test for HIV is positive.

Yor are reminded that the HIV test must be done on every unit of Blood collected by your Blood Bank prior to transfusion of Blood and Blood Components to Patients. Under no circumstance is Blood to be transfused until the results of the HIV test are found to be negative.

Please bring the contents of this circular to the notice of all fulltime and part time medical and nursing officers and MLTT working in your Blood Bank and ensure that these instructions are carried out.

රුධිර පාරවිලයන සේවය - ශ්‍රී ලංකාව

රුධිර පාරවිලයනය සඳහා කෙරෙන ඉල්ලීම
REQUEST FOR BLOOD FOR TRANSFUSION

1. රෝගියාගේ නම / Patient's Name) _____

2. රෝග තත්වය පත්‍රිකා අංකය / Bed Head Ticket No.) _____ ස්ත්‍රී පුරුෂ බව / Sex) _____ වයස / Age) _____ වාට්ටුව / Ward) _____

3. රෝගියා මීට කලින් පාරවිලයනයට භාජන කොට තිබේ ද? ඔව් / නැහැ.
Has patient had previous transfusions? Yes / No.
එසේ නම් ඉන්පසු කාඨන්‍යය හෝ සෙංගමාලය හට ගන්නේ ද? ඔව් / නැහැ / අප්‍රකටයි
if so, was it followed by a Rigor or Jaundice? Yes/No/Not known.

4. කාන්තාවන් පිළිබඳ (අ) ගර්භනී අවස්ථා ඇත ද? ඔව් 1, 2, 3, 4. නැහැ.
(ආ) මළදරු උපන් සිදු වී තිබේද? ඔව් / නැහැ.
(ඇ) උපතේදීම සෙංගමාලය වැළඳී සිටි දරුවෝ සිටින්ද? ඔව්/නැහැ.
FOR FEMALES: (a) Any pregnancies? Yes. 1, 2, 3, 4, No.
(b) Any still-births? Yes/No.
(c) Any babies jaundiced at birth? Yes/No.

5. රෝහලේදී කළින් ලේ පරීක්ෂා කළේ නම්, සඳහන් කරන්න. If previously blood tested in Hospital, state
ගණය / Group _____
ආර්එච් සාධකය / Rh: _____

6. පාරවිලයනය අවශ්‍යවීමට හේතුව / Indication for Transfusion)

7. ශල්‍යකර්මයේ ස්වභාව හා දිනය / Nature and date of operation)

8. පාරවිලයනය වහාම කළ යුතුය/ පහසු විටෙක කළ යුතුය

පාරවිලයනය හදිසියෙන්ම කළ යුතු වන අවස්ථාවන් හි දී මෙම පෝරමයෙහි වම් කෙළවරේ මුදුනෙහි 'හදිසි' යනුවෙන් සටහන් කොට, හදිසි බව පිළිබඳ යථා තත්ත්වය ද පැහැදිලි ව දක්වා ඉල්ලීම් කරන වෛද්‍ය නිලධාරියා විසින් නිසි පරිදි අත්සන්ළ යුතු වේ.
Transfusion will be immediate / when convenient.

In cases when Transfusions are urgently required this form should be labelled 'URGENT' at the top left-hand corner stating clearly the state of urgency and duly signed by the Medical Officer making the request.

9. අවශ්‍ය ලේ ප්‍රමාණය / Quantity of Blood Required) _____

දිනය / Date) _____

_____
වෛද්‍ය නිලධාරියාගේ අත්සන
Signature of Medical Officer

වෛද්‍ය නිලධායාගේ ප්‍රයෝජනය සඳහා පමණි / for medical officer's use only

අනුකමික අංකය / Serial No.) _____ ලැබුණු වේලාව හා දිනය / Time and Date of Receipt) _____

රුධිර ගණය / Blood Group) _____ නිකුත් කිරීමට බලය දෙන ලද බෝතල ගණන / Number of Bottles authorized for Issue) _____

ආර්එච් සාධකය / Rh) _____

	බෝතලය අංකය Bottle Number	දායකයාගේ නම Donor's Name	ගණන Group	ලබාගත් දිනය වෙනත් කරුණු Date of Collection & Other Remarks
1				
2				
3				
4				
5				
6				

පරීක්ෂණය කරන ලද්දේ
Direct Test done by :
වෛද්‍ය / Dr. _____

_____
වෛ. නි. ගේ අත්සන. ලේ බැංකුව, ජා. ලේ. දී. සේ.
Signature of M. O. Blood Bank. N. B. T. S.

ANNEX 6

NATIONAL BLOOD TRANSFUSION SERVICE
INVESTIGATION OF TRANSFUSION REACTIONS

1. NAME OF PATIENT ..... Ward ..... Bht ..... Age ..... Sex .....

2. SIGNS AND SYMPTOMS
   Of Research : .....
   .....

3. AMOUNT OF BLOOD GIVEN AND
   INDICATION FOR TRANSFUSION : .....

4. DATE AND TIME OF TRANSFUSION :.....

5. BLOOD BAG NUMBERS
   Transfused No: ..... At..... No..... At..... No..... At.....

6. Time of Issue
   From Blood Bank : No..... At..... No..... At..... No:....., At.....

7. TESTS WITH PRE-TRANSFUSION SAMPLE FROM PATIENT
   Abo Group: ..... Serum Group :..... Rh Type : .....

Cross-Match		RESULTS		
		ALBUMIN	**SALINE**	**IND" COOMB'S**
Sample From The Bag	(i)	.....		.....
	(ii)	.....	.....	.....
Sample from pilot Bottles	(iii)	.....		.....

Centrifuge and examine for evidence of Haemolysis / Jaundice

8. TESTS WITH BLOOD BAGS
   Abo and Rh Goup of (1) Blood Bags (i) .....
   (ii) .....
   (2) Pilot bottles (i) .....
   (ii) .....

Collection Date on Blood Bag :.....
Expiry Date on Blood Bag :.....
Centrifuge Sample for Haemolysis :.....
Culture Results : ....

9. CLERICAL CHECK

Reported Group on Request form :

Cross - Match Label on Blood Bag

.....

Blood Group Label on Blood Bag :

Compatibility Report : .....

10. TESTS WITH IMMEDIATE POST TRANSFUSION SAMPLE FROM PATIENT

Abo Group ..... Serum Group :..... Rh Type : .....

Repeat Cross - Match with each Blood bag Transfused Results :

		ALBUMIN	**SALINE**	**IND: COOMB'S**
Blood Bag	(i)			
	(ii)			
Direct Coomb's				

11. URINALYSIS

Deposits for red cell Casts :.....

Spectroscopic Examination for Haemoglobin

Methaemoglobin

Urobilin

12. TESTS WITH POST TRANSFUSION BLOOD AT 24 HOURS AFTER REACTION

Serum Bilirubin :.....

13. TESTS WITH POST TRANSFUSION BLOOD 10 DAYS

Screen for antibodies : .....

Identification of Antibody / Antibodies :.....

Titration of Antibody / Antibodies :.....

14. OBSERVATION & REMARKS

Investigation Carried out By :

Original Grouping & Cross - Match By :

Date :

Hospital :

Signature of Medical Officer

A copy o the investigations on this proforma must be sent to the Director, National Blood Transfusion Service, Central Blood Bank, General Hospital, Colombo 8 for every transfusion reaction reported. A very serious reaction must be reported by telephone immediately.

ANNEX 7

STATISTICS FOR THE MONTH OF .....

BLOOD BANK ..... HOSPITAL

		Blood Bank	**Mobile**	**Total**
A.	Total No. of Donor bled :	.....	.....	.....
	No. of 500 ml units collected :	.....		.....
	No. of 250 ml units collected .	.....	.....	.....

B. Requests for blood in 500 ml units .....

Blood cross - matched in 500 ml units : .....

Blood Transfused in 500 ml units : .....

C. Number of Reactions : Major ..... Minor .....

D. Number of Groupings

Donors	**Amc**	**Dt**	**Others**	**Total**
.....	.....	.....	.....	.....

Triple	**Double**		**Single 500 ml**	**Single 250 ml**
E. Blood Bags used				.....
Blood bags remaining				.....
Empty Satellite bags remaining	.....	.....	.....	.....

F. Administration sets used

Administration sets remaining .....

(* Indicate whether Terume/Fenwal etc.)

Donor sets or connecting sets used .....

Donor sets or connecting sets remaining :.....

G. **Antisera Stock**

	Used	**Balance**	**Require-ments**	**Empty Vials**
Anti A				.....
Anti B	.....			
Anti AB		.....		
Anti D				.....
Anti A	.....			.....
Anti CDE				
Bovine Albumin			.....	.....
Antihuman Globulin (Coombs' Serum)	.....	.....		.....

H	Analysis of Blood Issued (in 500 Ml Units)					
	Requested	**Cross-matched**	**Issued**	**Packed Cells**	**Plasma**	**FFP**
Medical Wards						
Surgical Wards						
Obstetric & Gy.						
Paediatric	.....	.....	.....	.....	.....	.....

		Tatal No. of Donors Screened	**Total Positive**	**Kits Remaining**
Hepatitis				
AIDS -	HIVCHEK			
	SERODIA			
	ELISA	.....	.....	.....

J	**Total No. of Donors Screened**	**Total Positive**		
		PV	**PF**	**Mixed**
Malaria	.....	.....	.....	.....

K	**Total No. of Donors Screened**	**Total Positive**
VDRL	.....	.....

Date:- M.O. i/c. Blood Band

* This report is to be forwarded to D/NBTS before 5th of each month

REQUIREMENTS / REMARKS

ANNEX 8

Blood Component - Statistics

Month of .....19.....

Blood Component	No. of units prepared	No. of units transfused
Red Cell Concentrate		.....
White Cell Concentrate (Buffy Coat)		.....
Platelet Concentrate		
Leucocyte Poor Blood		
Washed red Cells		
Stored Plasma		.....
Fresh Frozen Plasma (F. F. P.)	.....	.....
Cryoprecipitate	.....	.....
Cryo Poor Plasma (C. P. P.)	.....	.....

.....

Medical Officer - in - charge

Blood Bank, GH/BH/DH

Date ..... 19.....

Blood Component - Statistics

Month of .....19.....

Blood Component	No. of units prepared	No. of units transfused
Red Cell Concentrate	.....	.....
White Cell Concentrate (Buffy Coat)	.....	.....
Platelet Concentrate	.....	.....
Leucocyte Poor Blood	.....	.....
Washed red Cells	.....	.....
Stored Plasma		.....
Fresh Frozen Plasma (F. F. P.)		.....
Cryoprecipitate		.....
Cyro Poor Plasma (C. P. P.)	.....	

.....

Medical Officer - in - charge

Blood Bank, GH/BH/DH

Date ..... 19..... .....

CHAPTER 14

MANAGEMENT OF RADIOLOGICAL SERVICES

ORGANISATIONAL OBJECTIVES ARE :

Service objective

Cost - Effective Objective

Social Objective

Basic Mission (Service Objective)

is to provide a good radiological and imaging service to facilitate diagnosis, and thus maintain a high level of health care in Government institutions.

Cost - Effective objectives

are achieved by :

(a) Selection of the relevant investigation - Selective referral of patients or routine X'rays, and minimising waste by correct radiological techniques and avoiding repeat examinations; correct estimation of contrast media (such as Barium) to be used in special investigations.

(b) Indent for items in a realistic manner so that the stock does not become outdated, e. g. film size 40 x 30 accounts for 40% of consumption and 24 x 30 - 30%, i. e. films should be indented in a proportionate manner with an overall 30% increase anticipated annually.

Social Objectives.

Involves responsibility to community by keeping radiation levels to a minimum. This can be achieved by :

(1) Correct selection of patients for routine X'rays - e. g. the averge bed turnover rate varies from 5.6 days in a teaching hospital to 3.2 days in a district hospital. It is a common occurrence for a patient to be discharged prior to the reported X'ray reaching the ward. This implies that the X'ray was unnecessary in the first place.

A high percentage of patients admitted to medical wards are for a febrile illness with or without respiratory involvement, whose symptoms resolve n 3-4 days. This category of patients should only be X'rayed if there is no improvement in 48 hours.

Exposures involving a high radiation dose should be kept to a minimum - for eg. the 'dose' in a routine Lumbo - sacral spine is approximately 650 milirads (compared to less than 05 mr for a chest X'ray)

(2) **Reducing investigations to a minimum**

With the proliferation of imaging techniques, the clinician is tempted to use the entire spectrum of investigations in the relevant field, e. g. in UT infections in childhood - US scan, IVU, MCUG, isotope scan, possibly even CT scan - when only the US and isotope scans may be sufficient.

The radiologist should play a major role in advising the clinician regarding selection of investigations.

(3) **By correct radiological procedures.**

A. **Equipment** - An additional Generator is an essential item.

1. The following units are required :

Dark Room

Control Room / Rooms for Drying Cabinet or separate space for this

Preparation Room (for patient preparation)

X'ray room/rooms

Radiologists' Room

Office - To register X'ray request forms

Staff Toilet

Patient Toilet

Waiting Room / Corridor Functioning As Such

2. **Equipment** - Minimum essential

Base Hospital with approx. 500 beds and over :

1 static X'ray plant
1 static X'ray plant with Image intensification and TV monitoring.

2. Mobile plants.

Ultra sound scanner

With 1) 5 MH sector scan

(2) 3 -3. 5 MH sector scan

(3) Either 3.5 or MH Linear Scan

PROVINCIAL HOSPITALS

If over 1000 beds (e. g. Kurunegala) :

2 static X'ray plants
1 X'ray unit with Image intensification & TV monitor
2 mobile plants
1 US scanner

If average of 500-700 beds :

1 static plant
1 X'ray unit with Image intensification & TV monitor
2 mobile plants
1 US Scanner

TEACHING HOSPITALS / GENERAL

3 X'ray Units - comprising

1. Static Plant

1 unit with Angiographic Table Pressure

Injector, II, & TV Monitor

1 unit with Image intensification and TV monitor

if bed strength is greater than 1000 beds :-

Additional units required

1 static plant

1 US scanner with 3. 5 and 5 MH sectors

Camera attachment and 3.5 and 5 MH Linear scan

1 mobile plant to be stationed in ICU

1 C. arm mobile plant

- for orthopaedics and in Theatre work

OTHER EQUIPMENT FOR CENTRES OF EXCELLENCE

CT scanner

DS Angiographic Unit

Mammogram Unit

Ultra Sound with intra - cavitary probes

Echo cardiogram, Doppler scan

Isotope scanner wit Gamma camera

C MRI at later stages

IF THERE IS A DENTAL UNIT

Dental X'ray unit is essential as this involves a much smaller dose of radiation.

3. MAINTENANCE

Develop repair and maintenance unit. Train suitable technicians for each institution.

Basic Precautions - X'ray units

(a) Clean daily after use

(b) Protected by mackintosh during special procedures

(c) Minimise damage due to careless handling of stretcher patients by rubber protection of side and handles of stretchers

(d) Rodent control

CONSUMABLES INDENTED BY CATALOGUE -

Detailed list attached. Increase of 30% anticipated annually.

Special Investigations - Contrast consumptions calculated as follows:

Consumption - For Barium enema - 100 Ba per patient.

Barium meal - 25 gm Barium per patient together with I packet effervescent powder.

Intravenous urogram (IVU) - 40 cc per adult (76% tri-iodo compound)

20 cc per child (76% tri-iodo compound)

Micturating cysto urethrogram (MCUG) - 40 cc per child

(Details of special investigation given in separate section).

c. Staff Norms

Radiologist

In addition to routine X'ray procedures, US examinations are a very important aid to diagnosis. 15-20 cases are the minimum number of referrals. Examination time can vary from 2-15 mins. 2 1/2 to 3 hours are taken up by these examinations. Therefore 1 Radiologist is totally inadequate for any X'ray department. A minimum of 2 consultant Radiologists should be appointed to Teaching, General and Provincial Hospitals. Staff can be augmented by Assistant Radiologists doing their post-MD 1 year local training and Medical Officers. An MO should be taken only if interested in a career in Radiology, after 1 year's post - internship appointment. Weightage to this training period should be given at the selection board for MD Radiology.

Base Hospitals.

At the moment, one Consultant and one MO. However, with the anticipated development of these hospitals, the cadre should be increased to 2 Radiologists.

Other Staff

Nurses : To assist at specialized procedures essential in Provincial and Teaching Hospitals. In those Hospitals with CT scanners and angiographic units - 2 to 3 nurses are required depending on the work load.

Radiographers - Calculated on the basis of

1 - Office
1 - per X'ray room
1 - in - ward work
1 - Relief duty

and supervision of darkroom work and daily maintenance of X'ray equipment.

For a 24 hour service - double the above cadre (at least 10 radiographers required).

Labourers

1 per X'ray room

2 for darkroom / developing duties, delivery of films to wards by staff after 4 p. m. on a rotational basis. Clinic deliveries at 8 a. m. / on rotational basis.

Duties include mopping Radiologist rooms, X'ray rooms, cleaning of equipment, immediate cleaning of X'ray table if contaminated by urine, faeces, vomit, contrast media, Loading / transporting cassettes, helping the patients where exposure to primary X'ray beam is not involved. The overall responsibility for the X'ray equipment is the Senior Radiographer.

ROLE OF SENIOR RADIOGRAPHER

In addition to the work of the other Radiographers, he / she has the following duties.

1. Responsible for the X'ray equipment
2. In charge of stores - including annual indent
3. Balancing the films - i. e. No. of X'rays done to No. of films utilized.
4. Maintaining a detailed breakdown of film consumption daily.

5. Responsible for maintaining standard of radiography.

6. Drawing up the month roster

In large departments with 12 or more Radiographers, a Superintendent Radiographer is appointed, who deals solely with the above. This system obtains only in a very few hospitals due to shortage of Radiographers and absence of 24 hour duty schedules.

d. PROCEDURE FOR COMMON INVESTIGATIONS

(Handled by Radiographer in Absence of Radiologist)

1. Barium examinations

Barium swallow - oblique and AP views taken including gastric fundus.

2. Barium meal - effervescent powder given followed by 3 ozs. Of Barium (if effervescent powder is not available, patient sucks through drinking straw 8-10 times).

Rotate patient slowly through 360°.

View taken - AP, PA both oblique; 1/2 hr PA.

If any pyloric obstruction, 1 hr PA, 3 hr PA necessary.

3. Follow through examination

Requires larger volume of Barium - 8 to 10 oz, fairly dilute, into which 2 tsps gastrografin or IVU media is introduced.

Films at 20 mins. - PA view

Assess at one hour. Continue until ileo - caecal junction is reached.

Technique of enema

Amount - 1 1/2 per pt of Barium solution - twice the dilution used for Barium meals. Introduced through enema tube, patient turned prone and then on R side for 5-7 minutes to ensure caecal filling.

In elderly patients a foleys catheter should be used (prevents incontinence)

Views taken :

Lateral of rectum

Both obliques and PA

PA with 20° angulation of tube cardally for recto - sigmoid region.

Post evacuation

Double contrast examination is done only when supervised by a Radiologist.

The procedure is much simpler if plastics bags are supplied connected to a tubing with a 3 - way tap, which enables the Barium solution to be introduced, followed by air.

Barium enema in suspected Hirschsprungs

Avoid prior bowel preparation.

Barium must be made up in saline

Small volume introduced. 50-100 cc is usually sufficient.

Films : - lateral, oblique and OA followed by lateral after 24 hours.

PROCEDURE FOR IVU

Dose

76% tri-iodo compound

10 cc - 1st year
15 cc - 2 to 5 years
20 cc - 6 to 12 years
30 cc - 12 - 15 years
40 cc - Adults

Injections for infants should be done slowly (3-5 minutes). Routine pre-cautions should be taken by the House Officer in patients with a history of allergy / asthma. In these cases, a butterfly needle should be used to facilitate injection of Hydrocortisone, antihistamines if required.

Films taken at 5 mins, 10 mins, 20 minutes. Immediate film is taken, in addition, in the presence of renal masses.

Post micturition film should be done routinely - If renal ischaemia is suspected, additional films at 1 min & 3 min necessary. If kidneys are not visualized and hydro nephrosis is suspected films should be continued up to 1 hr., 3 hr., 6 hr, and 24 hrs. If there is suspected bladder pathology, **bladder view** should be done at 45 mins; include obliques and post mict. Film.

MICTURATING CYSTOURETHROGRAM

40 cc 76% tri-iodo compound (conray 480, urografin) made up to 200 cc with saline.

Introduced into bladder via catheter or supra pubic drain by House officer.

Films taken

AP with catheter in situ.

Then exert pressure on bladder.

- 2 obliques taken including renal area and urethra, whilst pt is micturating. This is followed by the post mict film.

It is not necessary to exceed a total of 4 films.

Procedure for Hysterosalpingogram.

Optimum period for this investigation

- 12 - 14 days after LRMP.

10 cc contrast used.

Films - Immediate & after 5 minutes (with cannula in situ.)

E. PROCEDURE FOR PATIENTS

1: Must at all times be accompanied by ward staff.

2. Stagger the X'rays, e. g.
Surgical ward patients - 8 a. m.
Paediatric patients - 10 a. m.
Medical wards - 2 p. m.

This does not apply to urgent / stretcher cases which could be sent at any time. These must be labelled as such, to enable immediate attention to be given.

Attempt must be made to X'ray clinic patients on the day of referral. This is easier accomplished by institutioning 8 - 2 p. m. shift by a Radiographer.

If the work load is too much. any appointment given must be written clearly on X'ray form. All attempts must be made to complete X'rays on outstation patient on day of arrival.

3. Expedite Investigations

a. Reduce outpatient waiting time

b. Reduce delay in giving dates for investigation.

This may not be possible for routine investigations, but any urgent investigation should be done early. The request should be labeled URGENT and referred to the Radiologist by the Consultant. Saturday morning can be reserved for those urgent investigations and Public Holidays for those urgent procedures where the radiologist is not directly involved.

A monthly meeting of Radiographers / Radiologists is useful to resolve any problems relating to patient care and radiographic techniques.

F. PROTECTION OF WORKERS IN X'RAY DEPARTMENT

In view of the cumulative effect of irradiation which can result in increased incidence of leukaemia and cancer, and in view of the sensitivity of gonads to irradiation, the following procedures must be followed.

(a) No worker in an X'ray Department must stand in front of a primary beam, for instance helping to hold a struggling infant.

(b) If exposure to X'ray beam is essential, as in fluoroscopic and angiographic procedures, and in X'ray taken in theatre and wards, a protective full Pb impregnated apron must be used.

These aprons should be hung on hangers, as creasing and folding will be associated with deterioration. These aprons should be subject to regular checks for radiation penetration, by the AEA.

(c) Film badges are mandatory to be worn by the staff whilst working in X'ray rooms. These are supplied and monitored by the Atomic Energy Authority.

G. STOCK CONTROL AND INDENTING

A catalogue with all the items required for an X'ray Department with a specific SR number for each item is available at MSD. These requirements will vary from Hospital to Hospital. The Senior Radiographer will be aware of the work load.

Storage - Air Conditioned Unit.

If this is not possible - Quarterly supply of stock ordered to ensure a rapid turnover.

As mentioned earlier, the film sizes commonly used are 40 x 30 - 40%; 24 x 30 - 30%. The films should be indented for in a proportionate manner with an overall increase of 30% annually.

Film sizes used :

15 x 40 cm, 18 x 24 cm, 30 x 40 cm, 35.6 x 35.6 cm. 35 x 35.6 cm, 35 x 43.2 cm. It must be noted that 35.6 x 35.6 cm is the only film size that can be used in Angiographic work with an automatic cassette changer.

Dental films : Occlusal 5 x 7 cm
Standard 3 x 4 cm.

Non - screen films are useful for detection of minimal bone changes in extremities (24 x 30 cm) and should be available at the Medical Supplies Stores.

Developer : Manual
or for a 500 bed Hospital
Fixer Automatic

Approximately 38 litres of each are used per month.

Contrast media required - again assessed according to the number of examinations per month:

Radio opaque contrast media

For IVU - tri - iodo compounds

There are several available, megalumine sets which have minimum toxicity, e. g. Conray, Urografin.

Media with an iodine content of 370 - 400 mg should be used for IVUs - 2 vials (40 cc) per patient. Contrast media with an iodine content of 280 mg / ml (e. g. conray 280) should be reserved for vascular work (5 vials / patient).

Non - ionic low osmolarity contrast media which is over ten times the cost of above should be reserved for myelography, high risk patients with heart failure and history of allergy who require either IVUs or angiography. This media could be used for infants investigations involving the nasopharynx and the tracheobronchial tree.

Alternatively, radio opaque water soluble media used for bronchography can be used. Radio opaque ora contrast media for cholesystography is the media of choice for these examinations (single dose consists of 6 tablets, totally 3 gr).

These examinations are infrequently done as ultrasound of the biliary tract is a more comprehensive method of examination. Similarly, drip infusion cholangiography is rarely indicated, but it is advisable to indent for 1 - 2 dozen vials of Biligrafin for this purpose.

$BaSO_4$ Powder

Comes in 5 kg packets with 50 gr. sachets. 100 gr is sufficient for 3 - 4 Barium meal examinations.

Effervescent powder which is used in conjunction with this should be estimated at 1 packet per person.

$BaSO_4$ for Enemas

Calculated at 150 gr. per patient (often 120 gr is sufficient)

Non - flocculable Barium sulphate

Essential for good small bowel studies. (10 oz. of 50% solution used) /

Buscopan - 10 mg vials; one per patient indicated in about 20 - 30% of Barium meals could be estimated at 50 - 75 vials annually.

Gastrografin - essential for 61 examination where perforation is suspected (2 bottles could be indented for).

CHAPTER 15

MANAGEMENT OF A PATHOLOGICAL LABORATORY

INTRODUCTION AND OBJECTIVES

In Sri Lanka a pathology Laboratory in a tertiary care hospital would comprise of four basic sections namely

(a) Histopathology
(b) Haematology
(c) Bacteriology
(d) Biochemistry

In a tertiary care teaching hospital like the General Hospital in Colombo, there will be four separate consultants in charge of each section. One of the four specialists will be appointed the head, and he will be the person in charge of the management of the laboratory.

In the provincial hospitals there will be one (Consultant pathologist) who will be in charge of the four modules of pathology. In the district hospitals, if a consultant is not available, a trained medical officer is present to oversee the smooth running of the laboratory.

The medical laboratory technicians (M. L. T.) are under the pathologist and will carry out all test procedures on clinical samples.

The main functions of a laboratory would be the diagnostic work of the hospital. Additionally in teaching hospitals the pathology department would be the teaching centre for medical officers. It will be the place where laboratory technologists would gain their practical experience.

Norms

The equipment norms will differ from hospital to hospital based on the number of different tests a hospital will perform. e. g. in a hospital where one M. L. T. is the cadre position, the equipment norm would include a microscope, centrifuge, E. S. R. rack, counting chambers, hot air oven and glass ware. This would permit a limited number of haematological investigations to be undertaken together with a few clinical pathological investigations like urine sugar to be tested.

In provincial hospitals one pathologist would be overlooking the work of subsections like haematology, bacteriology, histopathology and biochemistry. The bulk of the work at consultant level will be reporting on biopsies, blood films, and marrows. In teaching hospitals a specialist should be available for each of the modules of pathology.

The M. L. T. cadre has to be worked out on the sample load. A working rule is to have one M. L. T. for every 1000 tests performed per month.

One of the main drawbacks is the inability to have maintenance of equipment before breakdowns occur. At present the biomedical engineering services based in Colombo attend to any instrument breakdown. (If a technician is available on site competent to attend to minor problems of instruments it will be a distinct advantage as it takes time to get the assistance of an engineer).

SAMPLES AND REPORTS

All samples sent to histopathology are sent in 10% formol saline issued by the relevant section to the operating theatre. If a biopsy is performed in a ward, formol saline is requested from the laboratory.

Requests for E. S. R. are sent in bottles containing 3.8% citrate. 1.6 c. c. of blood from the patient is added to 0.4 c. c. of Citrate. Samples for other haematological investigations are sent in bottles containing ethylene diamine tetra acetate (E. E. T. A.) which prevents clotting. Bleeding time and clotting time are performed by MLTT after prior appointment. Blood for Prothrombin time (0.2 c. c.) is collected into 1.8 c. c of 3.1% sod citrate contained in bottles.

All samples for biochemistry tests are sent in plain bottles (clotted blood) except where blood sugar plasma fibrinogen are estimated when they are collected into bottles containing fluoride and potassium oxalate respectively.

In case of blood cultures the blood is collected into special media. These bottles containing fluid or solid media (Casteneda bottles) are obtained from the respective sections of the department.

Reporting on results are done on forms issued by the Ministry. Most results are made available on the same day by 3 p. m. except where certain tests are performed in batches on specified days of the week.

Record Keeping

Records of results are ideally stored in computers, but in their absence record books may be maintained. The details entered are the names with other details like bed head ticket number, ward number, sample requested and results.

Precautions against Hepatitis and HIV

The risk of laboratory acquired infection with human immunodeficiency virus (HIV) and/or hepatitis B Virus (HBV) is mainly from contamination of the hands and mucous membranes of the eyes. There is no evidence that HIV or HBV is transmitted by the airborne route. Although the level of the occupational risk is low, the consequences of infection are serious and should not be underrated by laboratory staff. Because there is no vaccine against HIV safe work practice provides the only protection at present against job related HIV infection. It is advisable to assume all samples from patients are also potentially infectious and to take all care to avoid contamination of hands and mucous membranes. This concept is referred to as universal precautions.

In South East Asia the prevalence of Hospital Acquired Infection (HAI) is 8.9 to 15.2% with a mean of 10%. The high prevalence is mainly due to the inability in implementing the infection control policies.

The Ministry has placed control of HAI high in a list of priorities and appointed Infection Control Nurses (ICN) to each of the hospitals. These nurses are directly under the microbiologist in hospitals where there is one. If there is no Microbiologist, they report to the Pathologist. The Microbiologist or the Pathologist will oversee the surveillance work carried out by the ICN. They would also help in the investigation of outbreak of infection with a point source origin.

CHAPTER 16

MANAGEMENT OF C. S. S. D

INTRODUCTION

In the past it was the practice in a medical institution for each independent clinical services to process and obtain its own necessary sterile equipment and develop its own technique resulting in a wide variation of techniques within the same institution.

This resulted in little or no standardization, higher costs, inefficiency, poor utilization of professional personnel, inadequate supervision and also duplication of equipment and facilities.

In organising a Central Sterile Supplies Department most of these shortcomings could be minimised and at the same time provide an effective and efficient service.

The C. S. S. D. Services

The C. S. S. D. is responsible for cleaning, servicing, packing, sterilizing, distributing and storing of all medical articles that need sterilizing. (instruments, linen, syringes, gloves and dressings).

Lay out of the C. S. S. D.

1. Should be centralized and closer to O. TT., LR, ICU.
2. Away from busy area e.g.. OPD, clinics etc.
3. Air conditioned if possible.

The premises of the C. S. S. D. can be divided into 4 zones.

1. Contaminated zone
2. Clean zone
3. Sterile zone
4. Protective zone.

Contaminated Zone

I. Receiving area (used articles form wards and O. TT)
II. Washing area (this is the most contaminated area in the C. S. S. D)

Work in this Areas

(1) Receiving the Instrument.
2) Sorting instruments and other articles for manual wash or machine wash.
3) Washing (manual method or machine methods can be used)
4) Cleaning of transport trolleys, instrument baskets etc.

The staff need protective clothes such as

* Plastic aprons
* Gowns
* Gloves
* Masks when taking care of the gloves (powdering)

Clean zone

I. Packing and servicing area (clean area)

Work in the area includes :

(1) Drying

(2) Inspection

(3) Servicing

(4) Lubricating

II. Sterilizing area. Following equipment should be available in this area.

- High pressure steam sterilizers (Autoclaving machine)
- Hot air oven

Work in this area

Loading the sterilizers for sterilizing. The staff needs clean uniforms and gowns. Masks are not needed.

Sterile Zone (Sterile storage)

- Storing sterilized items
- Issuing the sterilized instruments, linen, gloves and syringes etc. on a first in first out basis.

The staff needs clean uniforms, overalls with long sleeves, Mask and shoes. When entering this area remember to :-

(a) Wash your hands properly

(b) Change your shoes

(c) Change your uniforms

(d) Change your overalls

(e) Use a sterilized mask.

- Wash your hands and dry properly before touching the sterilized packages which are still warm.
- Never keep doors, windows open in this area.

Protective Zone (Other areas)

I. Gauze preparing and textile preparing area. (Rooms must be kept closed to keep away dust)

II. Changing rooms

III. Duty room

IV. Tea room

V. Store rooms (Instrument & textile)

VI. Gloves preparing area.

Remember :- Always wash your hands when going from one area to another area. Avoid movement between area.

Hygiene in the C. S. S. D

I. Personal hygiene

Remember :-

In the C. S. S. D work personal hygiene is as important as sterile instruments in operation

- To take care of head, nails, skin and clothes (your skin and hair have a great deal of bacterial growth.)

- To keep the hair tied (female)

Uniforms

There should be separate uniforms for C. S. S. D. staff to avoid organisms entering the C. S. S. D from outside.

The C. S. S. D. staff has to wear different clothes. In contaminated areas a plastic apron in front of the uniform gives good protection. Caps are needed in C. S. S. D work and where gloves when washing soiled items and cleaning the premises. Masks are needed when handling contaminated items and in the sterile storage. Because of a high contamination risk, the C. S. S. D staff should wear different shoes inside the C. S. S. D.

No one is allowed to enter the C. S. S. D without protective clothing, neither should the C. S. S. D staff enter from outside without protective clothing. Protective clothing, gloves, and caps must be changed daily and washed properly. Masks have to be changed every 2 hours.

Hygiene of the Hands

- Wash your hands always when entering one area from another and after removing gloves.
- Do not touch your hair or beard during work.
- Do not touch contaminated area after you have washed your hands.

Equipment of C. S. S. D.

(1) Equipment for washing

a. Instrument washing machine (mechanical washing machine)
b. Glove washing machine
c. Textile washing machine
d. Ultrasonic washing machine (for needles & syringes)

Mechanical washing is the optimum way to handle surgical instruments and other anesthetic items. After the washing process the items are clean and also disinfected.

. Ultrasonic washing is a suitable washing method for needles and syringes etc.

Remember

- To always rinse the items carefully after washing.
- Do not put any optical instrument into ultrasonic machine
- Use forceps with rubber covers if needed to touch during the process
- Use stop watch for right timing of the washing process.

Ultrasonic washing machine is suitable for

- Re - usable needles and syringes
- Orthopaedic screws, Plates, nails, and special instruments
- Sharp knives

- Sensitive instruments such as eye, ear, micro-surgical instruments, drills, dental instruments

- Endoscopy instruments

- Forceps - use with fibrescope

Remember :-

Wash the machine daily. Follow carefully the instructions given by the manufacturers. Be careful not to wet the electric inlet.

Use stop watch for the right timing of the washing process (Manual washing suitable for optical instruments, thermosensitive - cold light electrode items)

2. Equipment for drying

* Drying machine
* Air pistols

careful drying is very important to remove the water which contains chloride ions.

Chloride ions can cause corrosion on surfaces of the instruments during the Autoclave process.

When drying -

- Do not dry with pure cotton.

- After drying, check that all locks and joints are dry

- When drying needles and syringes use 80% alcohol - inject alcohol from syringe through the needle (this alcohol can be used over and over again during the day).

- Use cotton rolled around a wooden stick to dry, places where towels do not reach.

3. Equipment for Sterilization

- High pressure sterilization (Autoclaves, steam sterilizer)
- Hot air oven (dry heat method)
- Ethylene oxide gas sterilizers
- Water still

The C. S. S. D staff has to be aware of the working principles of the C. S. S. D machines, so that they know what happens during the process and what happens to the items inside the machine. By this knowledge mistakes are minimized and correct maintenance is guaranteed. The working manual has to be available always.

Steam Sterilizer (Auto - Claving)

The critical factors in steam sterilizer are

(1) Saturated steam (Heat / on moisture)

(2) Pressure

(3) Time

The temperature and pressure has to be corresponding to each other (please see the diagram)

	100°	110°	120°	130°	134°	143°
Temperature 0						
Pressure in Bars (KPA)	0	0.5	1	2		3
		50	100	100		300

When the temperature on steam pressure are corresponding to each other, the air is completely removed from the chamber and the sterilization process can be successful. Heat itself kills bacteria but are destroyed by saturated steam (moist heat)

The time is also critical.

The lower the temperature the longer the time needed.

Recommended Sterilization Temperature

Pressure and time

Temperature	Pressure	Time
120^{oc} - 121^{oc}	1 bar	20 minutes (For Rubber gloves)
133^{oc} - 134^{oc}	2 bar	13-15 minutes (for linen & instruments)
143°C	3 bar	3-5 minutes

This temperature is not recommended for use in sterilization, but in emergency cases you can use it for unpacked instruments.

Saturated steam is a gas and it is therefore able to circulate inside the autoclave chamber. Saturated steam penetrates the objects after air has been removed completely.

Hot air oven (Dry heat)

In this method hot air kills microbes by burning. The sterilizing time is longer than with steam sterilization method because it is more difficult to kill microbes by hot and dry air than with steam.

Supplies which can be sterilized by hot air method

-* Glass bottles
- Oils
- Syringes
- Dental Instruments
- Surgical Needles

} These items can be Sterilized also by steam

Do not mix steam sterilization with hot air method as this tends to damage instruments.

Materials which cannot be sterilized by hot air method

- Gauze
- Textile
- Rubber
- Plastic

Recommended Sterilization Time and Temperature

- 160^{oc} 2 hours
- 170^{oc} 1 hour
- 180^{oc} 30 minutes

These are minimum times. Never use shorter times. The sterilizing time begins when the temperature inside the oven after loading has reached the right temperature. The thermometer should be observed. After sterilization release the lock of the door and let the items cool inside the oven until the temperature is 80^{oc} - 90^{oc} specially when glass is sterilized otherwise they will break.

Ethylene oxide gas

Ethylene oxide gas is an alternative method for heat sensitive items.

Ethylene oxide is a liquid which is extremely explosive inflammable and hepato - toxic gas. Therefore manufacturers instructions should be followed carefully during sterilization process and after sterilization the handling and maintenance of machine.

Materials which cannot be sterilized by ethylene oxide gas

- Instruments
- Textile

Material which can be sterilized by Ethylene oxide gas

- Heat sensitive items - such as endoscope plastics, fibro optics, heat valve, cardio vascular catheters.

Inventory and stock control

Sister in - charge of C. S. S. D should be responsible for all the instrument, equipment, textile, dressing and documents.

(1) Adequate amount of consumable items (e.g.. dressings & gloves) textiles, instruments, syringes should be stocked.

(2) Stock items should be checked weekly and necessary items to be balanced (keeping record)

(3) Avoid pilferage

(4) Stock items should be under lock and key.

(5) Outside inventory to be checked daily

(6) All the inventories to be checked monthly and losses to be reported.

(7) Broken syringes, gloves, instruments to be exchanged weekly or monthly according to hospital rules and regulations.

(8) Condemning of instruments, equipment linen and other inventory items to be done regularly (every 6 months)

(9) Adequate amount of every item should be in stock to be used for any emergency situations (sterile and non sterile both)

Issue and receipts of Supplies

- Sterile supplies to be issued daily to the ward, twice or three times a day for O. TT and labour rooms.

- Used items should be taken over according to supplies.

- Taking over and giving over register to be maintained by officers concerned correctly.

- If there is any emergency situation sterile items would be issued to wards / O. TT / OPD / LR as required.

Maintenance of Instruments

Correct maintenance of Instruments is an important part of the C. S. S. D work. When maintenance is done in time the efficiency remains and the instruments last longer. The maintenance consists of check-up and lubrication. Preparation and sharpening must be done by a specialist and not in the C. S. S. D.

Checking means that functioning and cleanliness of items is checked. Instruments have to be free from any protein residues and rust.

Forceps and needle holders are in proper condition when they function properly with only first lock closed.

To ensure the proper function of moving part of instrument they must be lubricated regularly after washing.

Optical instruments are checked by looking through the lenses to see that it is clean and bright.

Lubrication must be done always after washing very important parts such as locks threads joints and canisters.

- The lubricant should be steam permeable anti bacterial and water soluble
- Instruments sterilized with dry heat should be lubricated with paraffin oil when dry.
- Bone drill equipment need a special oil for lubrication.
- Do not use too much oil for lubrication it can cause contamination after sterilization
- If instruments are not good enough change the instrument to new ones.

Packing of instruments and textiles.

Correct packing of instrument trays and packets is as important as washing and autoclaving. Steam penetration has to be guaranteed. It means that instruments are in the right position and wrappings are not too tight.

Each instrument tray or packet should have its own list of contents done by C. S. S. D. theatre nurses and doctors.

The number of different instruments in the tray / packet has to be exactly the same as the number on the list of contents. Count the instruments carefully.

Preparation for sterilization of Instruments

(1) Maximum weight for one tray / packet is 5 kg.

(2) Place protective caps, cover all sharp instruments or cutting edges.

(3) Forceps and needle holders should be locked from the 1st tooth only or left open.

(4) Ensure that these sets are complete.

(5) Wrap sucker tubes separately.

(6) Do not put piston in to barrel of syringe before sterilization.

(7) Never make the wrapping too tight.

(8) Put always the content or name of the instrument set or single instrument.

(9) Put always your initial and date of sterilization

(10) Use chemical indicators inside every package for sterility.

(11) Remember all preparations work done properly and carefully is good for the patient.

(12) Do the Bowie - Dick test for autoclaves before starting the sterlization (once a day).

(13) Check your autoclaves with biological indicators (spores) once in three months.

(14) Clean the autoclave chamber at least once a week with water and cleaning agent, rinse well with water and dry it.

Textiles

Sterilization of textiles is very difficult and such things as size of packets and correct packing methods have to be kept in mind.

Maximum size in textile package is 20 x 25 x 30 cm. Otherwise steam penetration is not good enough and packages will remain wet or unsterile after the sterilization process.

Put a chemical indicator in to the middle of the package.

Packing materials

(1) Two layers of paper suitable for packing
(2) Double fold wrapping towels
(3) Two single towels
(4) Never re-use the packing towels without washing.

Loading of autoclaves

Proper loading of autoclave is important to guarantee good penetration of steam and that the supplies sterilized in the autoclave come out dry.

The shelves or special wire baskets can be used to keep packets.

(1) Bowls and boxes are placed on their side with lids open.

(2) Textile packages have to be placed so that the folds should be parallel to the path of the steam.

(3) The packages may not touch each other.

(4) Do not keep packages one on top of the other.

(5) Packages should be kept 4 inch away form the door and walls of autoclave for good steam penetration.

(6) Do not load autoclave too tight.

Testing methods of steam sterilizers

Bowie - Dick Test

(1) Bowie - Dick test diagnosis type test and the result are completely dependent on the operation carrying out the correct procedure.

(2) Bowie - Dick test should be conducted as the 2nd cycle every morning.

(3) Put the test sheet in the middle of the package and wrap the package loosely.

(4) The test sheet must be marked as to the date, initials of person performing the test and the signature of the person who examines the results.

The Chemical Indicator Strip

- Use chemical indicator in every packing
- The change of colour shows the right temperature and steam pressure have been reached.
- Write on the reverse side of the strip date and the signature of the person who packed.

Biological indicators (Spore Test)

- The spore test should be done every 3 month to guarantee the sterility.

Put the ampules among items which have to be sterilized. Make a separate packing for them. After the sterilizing process is over the biological indicator should be sent to path. lab for reports. If the result is no bacterial growth or culture negative it means sterilizers are in good condition and in working order with good sterility.

If Bowie - Dick test sheets are not available, use spore ampules once a month and always after repairing of the autoclaving machine.

Instruments care in the wards and O. TT
Pre - disinfection

All instruments sterilized in the CSSD must be pre - disinfected in the wards and the O. TT before transporting them to the CSSD.

There are 3 Methods for pre - disinfection

(1) After washing the instruments boil them for 10 minutes.

(2) Immerse instruments after use into the disinfection solution. Soaking time depends on the effect of the solution. This is a good method if all items are fully immersed in the disinfectant solution.

(3) Use instrument washing machine and disinfecting of items. It is the most effective and safe method for handling contaminated items, if the items only can stand 85^{oc} temperature. After disinfection, items are put into transporting boxes / buckets and sent to CSSD.

Handling of sterilized items in the wards and O. TT. S.

When the transportation box / bucket with sterilized items inside, is returned to the ward :-

- Wash and dry your hands carefully disinfect them with alcohol.
- Put items into clean cupboards use always first in first out method.
- Clean the cupboard once a week and take the unused items away.

Re - pack and send these items to CSSD for sterilization (Disinfection is not needed)

When clearing the cupboard make sure that the packets do not get wet and contaminated.

Sterilized items should not be used after 10 days.

CHAPTER 17

MANAGEMENT OF HOSPITAL INFORMATION SYSTEM

MANAGEMENT OF HOSPITAL INFORMATION SYSTEM

It has been clearly established that reliable, accurate and timely information is vital for effective and efficient management of Health Services at any level. A well functioning Medical Records Department provides timely information for use in planning and management of hospital services (staffing, maintenance of inventories of drugs and supplies, planning for expansion of facilities and services etc.), support current and continuing care, continuing education programmes, health services research and legal requirements.

1. Maintenance of Medical Records

Although the functions of and demand for services from the Medical Records Department may vary according to the type of institution, the common denominator among all Medical Record Departments is the maintenance of records in a manner to provide storage and ready retrieval of necessary information. Therefore, the following procedures must be followed when a Patient Record (BHT) is issued, maintained and retained.

i. When a patient is admitted to the hospital, a patient record is issued and registration takes place in the Hospital Admission Register. Annual serial

numberings system suffixed by the last digits of the current calendar year should be used, e. g. 1/93 ..... 2869/93 1/94..... 107/94.

ii. When a bystander is to be admitted, two records must be written, one for the patient and the second for the bystander, under the same number issued to the patient. However, only the patient must be registered in the Hospital Admission Register and the Ward Admission Register. The word 'Guardian' must be written on the top of the record issued for the mother, which is used only for purpose of dieting.

iii. If a new - born infant is treated as an inpatient, a separate record must be written after registering in the hospital Admission Register. In the circumstance, drugs must be prescribed on the infant's medical record and not on the mother's record.

iv. Each patient's medical record should have the following information correctly recorded:-

- Patient reference number (Admission Number)
- Name of patient
- Home address
- Sex
- Age
- Marital status
- Religion
- Ethnicity
- Name and address of parent / guardian / relation
- Date and time of Admission
- Ward No.
- Name of Consultant
- Date of discharge
- Principal final diagnosis

The physical findings, results of investigation and daily state must be written legibly for each day and each entry must be initialled and dated.

Daily status should include

Symptoms

Observations

Analysis

Progress

Prescriptions.

v. Diagnosis and cause of death must be written correctly in the patient record in BLOCK LETTERS, in the appropriate cage. Abbreviations and vague symptoms should not be used, e.g. SOB, UTI, fever, respiratory failure, loose motion. abdominal pain etc. In case of injury or poisoning the nature and cause of injury / poisoning should be recorded e. g. fracture of the right femur resulting from a fall, cyanide poisoning - attempted suicide etc. This would enable the diagnosis to be coded according to the ICD and correct morbidity statistics made available.

vi. Records of all patients discharged from hospital must be sent from the ward to the Medical Records Department / Officer in - charge of Inpatient Statistics the following morning. If the patient - records are maintained in wards for purposes of research or continuing patient care, arrangements should be made to collect the patients' record from such wards and return them after recording the necessary information.

vii. Records of patients who died should not be sent to the Registrar for the purpose of death registration. A death certificate, duly completed on form B. 33 should be sent instead. If a record is required for an inquest, it must be obtained from the Medical Records department.

viii. Suitable storage facilities must be made available for filing of records. Filing must be done serially. Filing by day of discharge or any other method is not satisfactory.

ix. Records of discharged patients must be maintained in a suitable manner for a period of 5 years. Judicial B. H. TT must be kept for this period plus the period required till the case is over.

2. Registers to be maintained

2.1 Hospital admission register

All patients admitted to the hospital must be registered in the Hospital Admission Register. The Hospital Admission Register must be maintained under the following headings:-

- Admission Number
- Monthly serial number
- Name of patient

- Correct home address
- Age
- Sex
- Marital status
- Religion
- Date and time of admission
- Ward number
- Name and address of guardian
- Remarks.

An admission number has to be allocated to every patient on admission to hospital. The admission number is the same as the patient Record Number. Please refer 1.1. In estate areas where payments are made for patients (estate employees) the serial number should be prefixed by letter 'E' e.g. E 1205/94 enabling to count such admissions. The numbering of the Admission Register should be done with help of a numbering machine to avoid errors and the entries should be checked by head of Institution / Officer maintaining statistics occasionally and diet clerks daily.

2.2 Ward Admission Register

Ward admission registers must be maintained under the following headings.

- Monthly serial number
- Patient record number
- Name of patient
- Address
- Sex
- Marital status
- Religion
- Date and time of admission
- Date of discharge
- Status of Discharge, i. e. Transferred to ward / died / Missing / AMA etc.
- Diagnosis
- Remarks

2.3 Birth Register

All births (live and still) over 28 weeks of gestation must be recorded in the Birth Register.

- Serial number (yearly / monthly) should be given to the delivery (Mother) i. e. if in case of a twin deliver only one number is assigned.
- Still births should be recorded in red.
- Twin, triplet delivery etc. Should be bracketed.
- Birth weight of the infant should be recorded correctly.

At the end of each month, a summary should be prepared and recorded in the Birth Register itself before making entries of he following month.

Birth Register must be maintained under the following headings :-

- Serial Number (Yearly / monthly)
- Patient Record Number
- Disk Number
- Date and time of delivery
- Sex and weight of child
- Name of child
- HO on duty
- Sister on duty
- Case taken by
- Marital status
- Place of marriage
- Mother's name and nationality
- Name of father
- Occupation of father
- Presentation
- Mode of delivery
- Tear
- PPH
- Blood
- Ward

2.4 In-patient Disease Register

The main source of information of disease pattern is the in patient disease register. This is maintained by extracting data from Patient Records. Study of the inpatient disease register helps the health manager to identify the leading causes of morbidity and mortality for the institution. Further analysis will provide the manager with information on age, sex and seasonal variations in hospital admissions, and he/she could allocate resources accordingly, and provide an efficient service. For example, if malaria is a problem, most resources should be allocated to malaria control, drugs, laboratory facilities etc.

The following procedure should be followed in maintaining the Inpatient Disease Registers :-

A printed Inpatient Disease Register, along with an index is provided by the Medical Statistics Unit to all institutions to facilitate easy recording. The pages of this register are serially numbered and ruled as in the specimen (Annex 1).

A sufficient number of pages must be allocated for diseases listed in the Indoor Morbidity and Mortality Return (IMMR) depending on their incidence, e. g. institutions in Anuradhapura or Polonnaruwa districts should allocate more pages to record discharges in respect of malaria. A page could be divided and used to record the diseases with low incidence. On the top of each page, the disease, the ICD Code / List number as given in the IMMR must be written.

> All Patient Records of discharged patients (including transfers) should be sent from the ward to the officer responsible for maintaining the Inpatient Disease Register, the following morning. Before doing so, the nursing staff should check discharged Patients Records for completeness.

The patient Record Number (BHT Number) age, sex and the month of discharge of patient must be recorded in the Inpatient Disease Register. A death has to be circled or written in red for easy counting and all deaths occurring within 48 hours of admission to the hospital should be marked with an asterisk. When all discharges (including deaths) for the quarter are entered, a line must

be drawn. The last serial number will give the total discharges (live and deaths) for the quarter.

2.5 Hospital Notification Register and ward Notification Register.

The surveillance of communicable disease is based on a system of notification of certain diseases. The Quarantine and Prevention of Diseases Ordinance of 1987 and its subsequent amendments provide the necessary legislation for the implementation of this system.

> According to this ordinance, every practitioner treating a case of a notifiable diseae, should notify such cases to MOH of the area where the patient resides.

The notifiable diseases are listed and reviewed from time to time.

Most notifications originate from hospitals especially from the medical and paediatric ward. These wards should maintain a register, listing all such notified cases in sequence. This will be the Ward Notification Register. When a patient with a notifiable disease is admitted, the MO Treating the case should notify the case on clinical diagnosis using a standard notification card (From Health 544) without waiting for confirmation. The particulars related to this case should be entered in the ward Notification Register and the form sent to the office without delay to be notified to the MOH promptly. Every Teaching, Provincial and Base hospital should maintain a Notification Register and all cases notified should be recorded in this register.

> In the case of cholera, plague, yellow fever and acute flaccid paralysis / suspected poliomyelitis, notification should be immediate, by telephone / telegram to the MOH, RE, DPDHS, and DDG (PHS)

In the case of HIV infections / AIDS, the notification should be made to DGHS/ D-STD/AIDS Control Programme, immediately in a confidential manner.

Uses and Purposes of the Notification Register

- Notification is an important source of epidemiological information. and enables early detection of disease outbreaks, which permits immediate action to be taken by the Health Authority to control the spread.

- It is also useful for planning facilities for :

  (i) Medical Care

  e.g. (a) Number of hospital beds required for patients with specific disease.

  (ii) Planning facilities for preventive services. e.g. screening programmes, immunization campaigns and provision of sanitary services.

- Evaluation of measures taken to control and prevent the disease have been effective in reducing the frequency of such diseases.

2.6 Outdoor Register

Detailed information of patients attending the OPD cannot be recorded in large hospitals due to the heavy turnover of patients. An OPD Register must be maintained and the date and number of 1st visits and subsequent visits for the day should be recorded. This figure is determined by the numbers issued to the OPD patients. The information recorded daily must be consolidated at the end of the month to obtain the total number of 1st and subsequent visits for the month. A register similar to the OPD Register should be maintained in respect of the Branch Dispensaries and Visiting Stations.

2.7 Clinic Register

A Clinic Register should be maintained in each type of clinic. Information such as date of clinic, number of first visits and subsequent visits have to be recorded and this information has to be totalled at the end o the month.

Other registers to be Maintained.

It is necessary for a Hospital Manager to do an assessment of the various services carried out in the hospital. Therefore, registers have to be maintained to record necessary information on subjects such as immunization. (Triple, dual, polio, measles, tetanus toxoid, BCG, ARV), number of EEG and ECG recordings, X'rays taken, dressings, performance of dental surgeons, surgical procedures performed etc.

3. Statistical Returns to be submitted

3.1 Quarterly Indoor Morbidity and Mortality Return

IMMR provides a quarterly summary of the inpatients' disease register. It also provides information on total admissions, patient days for the quarter and deaths that occurred within 48 hours of admission to hospital. Therefore, study of this return before forwarding it to the Medical Statistician will provide the health managers with vital information mentioned earlier. This information could be made use of for reallocation of beds, indenting of drugs and further investigation into deaths.

It is also important that the Head of the Institution does a random check of the data recorded in the IMMR with the entries made in the Inpatient Diseases Register before placing his/her signature to make sure that the return has been completed correctly.

All government hospitals providing inpatient care services, other than the maternity homes prepare the IMMR quarterly. The Teaching Hospitals should forward the return directly to the Medical statistician and the Provincial and Base Hospitals to the DPDHS. The IMMR with facilities to record information of all four quarters in the same form should be kept in the institution as the office copy.

The IMMR is based on Morbidity Tabulator list of the International Classification of Diseases and Lists number of diseases / disease groups. Live discharges and deaths in the hospital are recorded in the Inpatient Diseases Register according to the above list. This information has to be transferred at the end of each quarter to the IMMR and recorded in the appropriate columns and line (disease)

If there are no live discharges and deaths for any disease the line should be left blank.

The number of patients remaining at the beginning of the quarter and ending of the quarter and patient days required to complete the summary page of this return should be obtained from the mid - night census.

3.2 Quarterly Outdoor & Clinic Return

Total number of treatment days, first visits and subsequent visits are recorded in the OPD / Clinics registers. This information consolidated for the quarter should be entered in the Outdoor / Clinic return and submitted along with the IMMR.

The information available in respect of the OPD patients is not sufficient for Hospital Managers. It is appropriate if a survey of about a week's duration is carried out at least twice a year to obtain age, sex, morbidity and seasonal pattern of the out patients. This information will help the Manager to allocate resources accordingly.

3.3 Monthly Maternity Return (H. 830)

The information to complete the Monthly Maternity Return has to be obtained from the Birth Register and the Ward Admission Register maintained in the hospitals having maternity wards. This gives vital information such as number of births (live and still), birth weight of infants born in hospital, maternal deaths reported from the maternity wards, number of caesarian sections etc. The Health Manager could study the trends of birth weight and still births, investigate and initiate intervention programmes with the relevant officials.

The monthly maternity return should be forwarded to the Medical Statistician by the 5th of the following month.

3.4 Annual Bed Strength Return

Analysis and comparison of data in this return and the patient days by wards will help the Health Manager to re-allocate beds and staff. The information necessary to complete this return must be obtained by doing a physical count of all beds in the hospital as on 31st December, each year.

As described under Section 4.3 the ward number, type of ward (i. e. medical, surgical, paediatric, maternity etc.) number of patient beds and other beds must be recorded in this return.

3.5 Staff Return

Information of medical and paramedical staff in position as on 31st December must be recorded in the staff return. Any personnel serving in the hospital in a visiting capacity should be recorded separately.

3.6 Monthly Dental Return (H. 12001)

All Dental Surgeons should record their daily performance in the monthly Dental Return and the daily recording made should be consolidated at the end of the month. This return should be sent to the Medical Statistician / DPDHS by the 5th of the following month.

3.7 Immunization return

The Immunization Return has to be completed and submitted to the MOH quarterly.

3.8 Family Planning Return (. 1200)

New acceptors of family planning has to be recorded on Form 1200. The same is used for purposes of reporting as well as a register as this has to be filled in duplicate. The return has to be submitted monthly as per instructions given on the reverse of the form.

4. HOSPITAL STATISTICS - MEASUREMENTS AND INDICATORS

The hospitals maintain aggregate data such as total number of inpatient admissions and discharges, live births, foetal and neonatal deaths, maternal and other deaths, caesarian sections, surgical operations etc. There is an increasing emphasis on standardization of health statistics for valid comparison and analysis. The use of standard terminology and reporting methods will also increase the validity and reliability of the data.

The following are some terminology and computation of selected hospital rates / ratios that are accepted and used in presenting health statistics.

4.1 Census Data (Day - as - a - Unit Method)

Inpatient Census The number of inpatients present at any one time

Daily Inpatient Census

The number of inpatients present at the census taking time each day, plus any inpatients who were both admitted and discharged after the census taking on the previous day.

Inpatient Service Day

A unit of measure denoting the services received by one inpatient in one 24 hour period.

Note : Synonymous terms - patient day, Inpatient day, census day, bed occupancy day

Sample Inpatient Census Display

Number in hospital at 12 p. m. September 8 (Inpatient Census)	230
Plus : Number admitted September 9	+35
	265
Minus : Number discharged (including deaths) September 9	-37
Number in hospital at 12 p. m. September 9 (Inpatient census)	228
Plus : Number both admitted and discharged (including deaths) September 9	+5
Daily Inpatient Census (Inpatient Service days) September 9	233

A hospital wide - daily Inpatient Census - has to be done in the ward by the nursing staff. This procedure must be done correctly and the census forms / information made available to the Medical Records Department (Annexure II). The official census taking time in a hospital is usually midnight (12 p. m.) But it need not be so, so long as it is in the same time each day.

The daily inpatient census indicates the total number of patients treated during the 24 hours period, not only those present at the census taking time, but

also those both admitted and discharged between census taking hours. Since the total number of patients given services in one day equals the days of services given, the daily inpatient census is equal to the number of inpatient service day for the day.

Average Daily Inpatient Census. Average number of inpatients present each day for a given period of time.

The formula to determine the average daily inpatient census for a hospital is :-

$$\frac{\text{Total inpatient service days for a period (excluding new borns)}}{\text{Total number of days for the same period.}}$$

The average daily inpatient census for the new - born inpatients should be reported separately (Annexure II)

4.2 Length of stay (Inpatient - Hospitalization - as - a - Unit - Method)

Length of stay (for one Inpatient) The number of calendar days from admission to discharge.

The length of stay is determined by subtracting the date of admission from the date of discharge, when the patient is admitted and discharged within the same month, and with appropriate adjustments when hospitalization extends, over one month or more. the length of an inpatient hospitalization is considered to be one day if he is admitted and discharged the same day and also if he is admitted one day and discharged the next day.

Total length of stay (for All Inpatients) The sum of the days of stay of any group of inpatients discharged during the specified period of time.

Average length of stay

The average length of a hospitalization of inpatients discharged during the period under consideration.

The formula for computing average length of stay is

Total length of stay of patients discharged including deaths, excluding new-borns

---

Total discharges, including deaths, excluding new - borns.

The Diet Clerks record all inpatients admitted and discharged for diet purposes. Therefore, information necessary for the calculation of the average length of stay should be provided by them.

The sum of counts resulting from the two information collecting methods, the 'day as a Unit' method and 'inpatient hospitalization as a unit' method rarely coincide exactly for the same month of even for the same year. However, the totals will be very nearly the same. Because of this, inpatients service days are often used in calculating the average length of stay.

4.3 Inpatient Bed Count

Inpatient Bed Count

The number of available inpatient beds both occupied and vacant, on any given day.

The size of a hospital and its resources for patient care are often indicated by the number of inpatient beds regularly maintained. An inpatient bed count must be done ward - wise for the entire hospital.

Patient beds are defined as the 'number of available. serviceable beds in a hospital, both occupied and vacant, excluding cots for the new born nursery'. Beds used in connection with brief treatment periods, such as examination room or labour room or otherwise normally used for patients to whom other beds are assigned, are excluded. Incubators / cots used for premature / sick new borns should be counted as patient beds. The number of available beds in a hospital

remains constant for a long period of time. However, this number can and does change. Thus a bed count must be done at least once a year.

4.4 Hospital Rates / Ratios :

Inpatient bed occupancy rate:

$$= \frac{\text{Inpatient service days}}{\text{Number of available beds} \times \text{number of days}} \times 100$$

Neonatal death Rate

$$= \frac{\text{Number of new - born deaths}}{\text{Number of new born discharges, including deaths}} \times 100$$

Foetal death rate (Still births)

$$= \frac{\text{Number of foetal deaths (over 28 weeks of gestation)}}{\text{Number of births, including foetal deaths (over 28 weeks of gestation)}} \times 100$$

Cesarean Section rate :

$$= \frac{\text{Number of cesarean sections performed}}{\text{Number of deliveries}} \times 100$$

Hospital wide death rate

$$= \frac{\text{Number of inpatient deaths}}{\text{Number of discharges including deaths.}} \times 100$$

Maternal death rate

$$= \frac{\text{Number of Maternal deaths}}{\text{Number of maternal discharges, including deaths.}} \times 100$$

4.5 Monthly Statistical Bulletin :

It is important that all large hospitals produce a monthly statistical bulletin. The format in Annex III can be used as a guide.

Copies of the bulletin should be circulated to all wards. The Health Managers should use this data to plan and manage the hospital services. Ward - Wise information of inpatients such as length of stay, bed occupancy rate etc. is a good indicator to be used by the Health managers in the allocation of beds and other services.

ANNEX 1

Disease : Malaria **I. C. D. Code : 084**

TOTAL DISCHARGE				
Serial Number	B. H. T. Number	Age	Sex	Month of Discharge
1	350 / 92	34	M	1
2	401 / 92	46	F	1
3	541 / 92	22	F	2
4	706 / 92	12	F	3
5	756 / 92	51	M	3
				(End / 1ST Q :)
1	1022 / 92	50	F	4
2	1522 / 92	80	M	5
3	2215 / 92	40	F	5
4	2231 / 92	22	M	6

ANNEX 1

For the 24 hours endinded midnight

DAILY WARD CENSUS

Ward (S)..... Beds..... Date.....

(DD/MM/YY)

Patients Remaining Last Midnight Patients Remaining this midnight.....

ADMISSIONS / TRANSFERS IN FROM OTHER WARD				DISCHARGES / DIED ? TRANSFERS OUT TO OTHER WARD			
BHT	Name	Time	Status	BHT	Name	Time	Status

Admissions	Transfers in from other ward		Discharges				Transfers Out to other ward
			Home	Other Hospital	AMA or Missing	Died	

Note : *Admit / from Ward+ ++Home / other Hospital / AMA / Missing / Died / To Ward + Remaining Last Midnight + (admits / etc.) - (discharges / etc.) should = Remaining this Midnight

Number admitted and discharged / died on same day=..... Number of babies =.....
(Obstetric Wards)

ROUTING : ....
Night Nurse Night Sister Matron Medical Records

ANNEX III

MONTHLY STATISTICAL BULLETIN

Inpatients :

Bed Complement (Inpatient bed count)

Total patients admitted

Daily average admissions

Daily average discharges .....

Average daily sick

Average Length of stay

Bed occupancy .....

Hospital Deaths :

Deaths within 48 hours of admission .....

Deaths after 48 hours of admission .....

Death rate

No. of still births (foetal deaths) .....
(Over 28 weeks of gestation)

O. P. D. Treatment

1st Visits .....

Subsequent visits .....

Total OPD Patients .....

Clinics

Type of Clinic :	No. of Clinics held	No. of visits First	Subsequent	Average per clinic
Medical	.....	.....	.....	.....
Surgical	.....	.....		.....
Cardiology	.....	.....		.....
Skin	.....	.....	.....	.....
Psychiatry	.....	.....	.....	.....
Gynaecology	.....	.....		.....
Obstetric	.....	.....	.....	.....
Eye	.....	.....	.....	.....

.....

Maternity Services

No. of admissions .....

No. of deliveries .....

No. of live births .....

No. of live births less than 2500 grams .....

No. of maternal deaths .....

No. of breach births .....

No. of caesarean sections .....

No. of deaths among infants born in hospital .....

E. E. G. Services

No. of EEG's taken .....

E. C. G. Services

No. of ECG's taken .....

X-ray Services

No. of patients x-rayed

No. of films used

No. of special examinations

Laboratory Services

Histology

Haematology

Biochemistry

Microbiology

.....

.....

Inpatient Statistics by wards

Services	Ward No	Beds	Admission	Discharges Sick	Av. Daily of stay	Av. Length Occupancy	Bed Rate
Paediatric Gynaecology Obstetric Medical Surgical							

Surgical Operations

Operation of the Nervous System

Operation on endocrine system

Operation on eyes

Operation on the ear

Operation on nose, mouth and pharynx .....

Operation on respiratory system .....

Operation on the cardiovascular system .....

Operation on the haemic and lymphatic system .....

Operation on the digestive system .....

Operation on the urinary tract .....

Operation on male genital organs .....

Operation on female genital organs .....

Obstetric Operation .....

Operation on the musculoskeletal system .....

Operation on the breast .....

Operation on the skin and subcutaneous tissue .....

Ill - Defined Operation .....

Classified by cause :

(Diseases / Disease groups listed in the IMMR
Should be used to classify deaths)

Septicaemia .....

Malignant neoplasm of thyroid gland

Acute myocardial infarction

Hypertensive heart disease

Cirrhosis of liver .....

Deaths by age and sex :

Age group Sex	Under 1 yr	1-4 yrs	5-14 yrs	15-24 yrs	25-49 yrs	50-6 yrs	Over 60 yrs
Male							
Female							

CHAPTER 18

INFECTION CONTROL

INTRODUCTION

A hospital infection is an infection acquired in hospital by a patient who is admitted for a reason other than that infection. Hospital acquired infection (HAI) is known as Nosocomial infection.

Before the advent of antibiotics most hospital infections were due to micro - organism of external origin (salmonellosis' caused by infected food, bacterial gangrene, etc. or to micro - organisms not present in the normal flora of the patient (diphtheria, tuberculosis or any other infectious disease in the conventional sense), but this has now changed. Nowadays hospital infections are caused by micro - organisms which are normally present in our personal flora, but in so small quantities that they are not pathogenic under normal circumstances. When an antibiotic is administered, however, it acts not only on the pathogenic micro-organisms that are the target of the therapy but also on the whole of the patient's personal flora which it treats selectively.

The Main Predisposing Factors of Hospital Infections

1. Antibiotic therapy;

2. The increase in the number of hospitalised patients susceptible to infection (newborn infants, old people, malnourished or diabetic subjects, immunosuppressed);

3. Use of increasingly invasive techniques for diagnosis (catheterization) and therapy (Immunosuppressive steroids, implantation of foreign bodies or tissue);

4. Increase in the number of people dealing with the same patient;

5. Increase in patients' movements within the hospital;

6. Hospital staff not adequately trained in the prevention of infection;

7. Unsuitability of architectural design and sanitary facilities.

Objectives of an infection control programme

The objectives of a hospital infection control programme are to ensure that each health care worker (medical, nursing, para medical and auxiliary staff) can carry out their duties required in their positions without exposing themselves and others in relation to infection and cross infection.

All health care workers involved in the care of patients should know the means by which cross infection can occur. Therefore each member should be aware of :

1. The three factors that interact to cause disease, such as the agent, the host, and the environment required for infection to occur;

2. The general concepts of association and causation;

3. The nature of the infecting organism;

4. Where the organism is harboured;

5. How it is transmitted;

6. Does the organism survive outside the body;

7. How immunity to the causative organism is acquired and for how long it is effective;

8. The principal port of entry for the organism;

9. What constitutes a susceptible host;

10. The Blood and Body Substance Isolation concept;

11. How to interrupt the chain of infection between the source and the individual host;

12. The importance of early diagnosis and treatment;

13. The value of immunization, hygiene and asepsis;

14. The need to develop feelings of responsibility for preventing the onset and the spread of infection;

15. Why there is a need to be willing to learn and abide by health regulations and hospital policies.

DISPOSAL OF SHARPS

Handing and disposal of Sharps

i. Should be done very carefully to prevent sharp or needle stick injuries. Blood borne pathogens like HIV and Hepatitis B virus can be transmitted through infected needle syringes, scalpel blades, razors, surgical instruments or sharp object.

ii. Place needles, syringes and all sharp objects in a rigid, puncture proof non breakable, water proof containers with a lid and a handle. In home care situations a VIM/ any other kind of plastic bottle can be used.

iii. The plastic container should be kept in the closest area where the sharp items are to be used e.g. injection room or the utility room.

iv. Label the container so as not to confuse with other wastes, keep it away from children.

v. When it is one fourth filled, incinerate or bury it under seven feet deep.

SECTION II
COMMON SOURCES OF HOSPITAL INFECTION

Microorganism	Source	Mode of Transmission	Infection or disease
Bacteria staphylococcus aureus	Nares, skin, hair	Contact, Vehicles, Airborne, Autogenous	Infected wounds, pneumonia abscesses cellulitis, food poisoning.
Streptococcus, beta haemolytic Group D	Colon, Vagina of adult females	Contact, vehicles autogenous	Urinary tract and would infections.
Streptococcus Viridans	Naso - oro - pharynx Colon		Bacterial endocarditis Enteritis
Toxigenic Escherichia coli		Autogenous contact, vehicles	
Bacteroides species	Colon, perineum		Peritonitis, abscesses pneumonia, bacteremia, urinary tract and would infections
		Contact, autogenous direct, airborne	
Fungi and Yeasts Candida albicans	Mouth, colon, tract, skin	contact, vehicles, autogenous	Moniliasis, dermatitis
Viruses Herpes Viruses	Lesions of the the mucous membrane, skin, blood	Contact, vehicles	Sexually transmitted disease, cold stores
Hepatitis A	Faeces, blood urine	Contact, vehicles	
Hepatitis B	Faeces, blood, body excretions and fluids	Contact, vehicles, airborne, possibly vectors	Infectious Hepatitis Serum Hepatitis

vi. Do not try to break bend or remove the needle from the syringe prior to disposal.

vii. Reusable sharps / instruments should be collected in puncture proof containers before cleaning and sterilization.

viii. Take extra precaution by using heavy duty gloves when cleaning or washing sharps.

ix. Needle stick injury or sharp injury may occur even though the health care workers use protective attire / or barrier precautions. Gloves may not prevent them unless they handle sharps very carefully.

x. All health care workers should be trained how to handle needles and sharp objects.

Waste disposal

Daily collection of unwanted materials should be classified in hospital before disposal; otherwise it may lead to spread of various types of infection. All health care workers and the public should be educated by the hospital authorities to control infection. Each country, hospital or institution has its own ways of handling contaminated waste.

Classification of waste

a. Normal waste
- flowers
- papers
- harmless liquid
- kitchen refuse
- plastic bottle

b. **Contaminated waste**

- include all materials contaminated with blood and body substances.
- gauze swabs / cotton wool / bandages.
- catheters / suction tubes / corrugated tubes
- sanitary pads
- infected materials / liquids / pus / saliva / faeces / urine
- biological waste - placenta

- amputated limbs etc.
- sharps e.g. needles, blades, scalpels, sharps

c. **Problematic / risk waste**

- oils
- outdated medicine
- injection bulbs
- radio active waste

Handling of waste

1. collection
2. packing
3. transportation
4. disposal

Collection

colour code - normal waste - blue

contaminated waste - yellow -

risk waste
problematic waste } red

It may depend on the policies and procedures and the availability of materials in the hospital.

Containers to collect waste should be provided by the management.

Method of disposal

1. Incineration
2. Burning in safe area
3. Rinse on to drain pipes
4. Burial
5. Inactivate them with other chemicals

TYPES OF LINEN

Soiled linen
Dry linen
Infected linen

Used linen is loaded with micro organisms. It should be handled minimally to reduce cross - infection. Immediately after use it should be put in to a separate bag or bucket according to their availability in the institution before transporting to the washing area or laundry. The bag should be taken to the bed - side to collect the linen. Never count the linen in the ward or bed - side as it will lead to spread of infection. if there is a washing machine available sort out and empty directly into the washing machine, without intermediate handling. Gloves and protective attire should be worn if the linen is soiled or infected. The laundry bags should be of two colours. e. g. blue and yellow, which could easily be identified by everybody.

The laundry bags should be water - proof, strong, and light to carry and cheap. Canvas bags are washable. Nylon or polythene bags can be discarded. In some countries hot water soluble bags are also available to collect linen. The laundry bags also should be washed separately. All washable fabrics are easily disinfected by hot water.

The two categories of linen should be washed in separate machines or separate sections of the laundry. Infected linen should include a disinfecting stage in which the temperature is kept 65.°C for 10 minutes. 71.°C for 3 minutes. Extra time should be allowed for mixing and warming up the contents of the washing machine. Normally 4 minutes in small machines and 8 minutes in large machines. All washing machines should be fitted with thermometers which are accurate and correctly placed to register the temperature.

Infection Control and Care of Linen

1. The purpose of a laundry service is to process soiled and / or used linen into clean linen that contributes to patient comfort and care, and is not a vehicle of infection.

2. Clean linen and soiled linen are to be stored separately.

3. Containers transporting clean linen must be cleaned daily with detergent or by steam cleaning.

4. Laundry staff are to wear household rubber gloves or leather tipped gloves when collecting laundry from the wards.

5. Sufficient laundry bags must be supplied to the wards.

6. All linen soiled with a patient's body fluids is potentially infectious and thus must be placed in a plastic bag, then a laundry bag for transportation to the laundry. A yellow plastic bag must not be used.

7. Used linen is linen without blood or other body fluid, and this is to be placed in a laundry bag and when three quarters full, secured at the top to prevent linen spilling out.

8. Linen from scabies and lice infected patients. This linen is to be treated as for soiled linen. Place linen into plastic bag then into a nylon laundry bag.

9. A notice will be displayed in each Sluice Room (Pan Room) indicating care of used linen.

10. Gowns are no longer required for isolation practices. A plastic apron is adequate. It is not necessary for any Hospital staff to wear gowns to cover their clothes except in special areas, e.g. ICU (ACE), ITU, CCA Microbiology, Pathology, Haematology and Laboratory areas.

11. Patients' gowns only will be supplied to Patient Care areas. If covering is required for Urinary Catheterization other sterile procedures, these are supplied by CSSD.

For other aseptic practices in Ward areas where a sterile gown in not required a plastic apron is sufficient.

If members of staff become grossly contaminated at any time with body fluids they must shower immediately and change their clothes.

Policies

Responsibility should be taken by all health care workers to maintain the cleanliness of ward / hospital.

P. H. I. and I. C. N. play an important role to teach the policies and supervise the procedures practiced by other H. C. W.

The following officers are also responsible for this process.

- Ward Sister / Nurse should supervise cleanliness of sharps / clinical waste and the disposal of normal waste.

- Overseer - should supervise the environment - minor staff should be delegated for necessary duties. If there is any problem should consult administrative officer or director for the transportation or disposal of waste.

- Microbiologist / pathologist / senior M. L. T. should plan for safe disposal of biological, contaminated waste and radio - active substances.

- Director / MS / DMO / Medical Officer should provide sufficient material and utensils.

Care of catheters

A. Urinary catheters

Nurses should play an important role for caring of urinary catheters to prevent infection.

Source of infection

1. Unsterile catheters
2. Urethral trauma by using wrong size.
3. Contamination during - the procedures.
   - by the connecting tubes and bottles
   - Changing bottles and catheters
4. Retrograde flow to the bladder from the catheter or urine bags / bottles.
5. Lack of preparation.

   e. g. washing the urinal area, or perineal area twice a day with soap and water.

- Educate the patient to maintain cleanliness and perineal exercises.

Culture of urine to be done

1. At the time of catheterization
2. If any clinical sign indicates
3. After removing the catheter
4. Once a week after catheterization

Type of suction catheters

1. Oral suction - Clean
- Sterile - endotracheal
- Tracheal suction catheter
- Use one catheter per time for each patient.
- Discard all catheters considering as contaminated waste.

Processing reusable needles and syringes

Disposable single - use syringes and needles are generally preferred for all patient care and laboratory procedures. Needle - locking syringes or one piece needle - syringe units (disposable or reusable) should be used to aspirate fluids, so that the fluid collected can be discharged safely through the needle if desired. However, in some situations, syringes and needles suitable for reuse and sterilization may need to be used for economic and practical reasons. In such situations, it is imperative that needles and syringes are decontaminated before being reprocessed and reused.

Reusable syringes and needles can be processed by the following method. Note that gloves must be worn, and extreme care must be exercised to prevent needle - stick injuries and / or cuts.

- Leave the needle attached to the syringe.

- Aspirate hypochlorite solution, or another suitable disinfectant containing 0.1% available chlorine, into the syringe.

- Immerse the syringe and the attached needle in disinfectant solution, horizontally in a flat tray.

- Leave them immersed in the disinfection solution for 20 minutes.

- Discharge the disinfectant solution from the syringe and needle.

- Rinse the syringe and needle with water, several times.

- Examine needles and syringes for needle barbs, integrity of syringe seal (rubber ring), the fit of the needle hub to the syringe, whether syringe markings are readable etc.

- Sterilize the syringe and needle by autoclaving (in a steam sterilizer) or disinfect by boiling in water for 20 minutes prior to reuse.

Care of gloves

1. Surgical and examination gloves are intended for single use only. Nevertheless, in some situations these gloves will have to be reused. Gloves may be reprocessed by the following method.

a) Rinse your gloved hands thoroughly in a hypochlorite solution (0.1% available chlorine).

b) Rinse your gloved hands in clear water to remove the disinfectant (disinfectants may cause the gloves to deteriorate.)

c) Wash your gloved hands with soap and water and rinse thoroughly (detergents may cause 'wicking'. I. E. enhanced penetration of liquids through undetected holes in the gloves).

d) Remove the gloves and hang them up by the cuff to dry.

e) Wash your hands.

f) Test the gloves for holes before reuse by filling each glove with 325ml + 25ml of water at room temperature, twisting the cuff through 360 and placing the gloves in a rack for two minutes; look and feel for leaks. If possible, dust the gloves with French chalk or talcum powder before reuse.

2. General purpose utility gloves may be reused but should be discarded if they are peeling, cracked, or discolored or have punctures, tears or other evidence of deterioration. Utility gloves may be reprocessed by the following methods.

a) Rinse your gloved hands thoroughly in a hypochlorite solution (0.1% available chlorine).

b) Rinse your gloved hands in clear water to remove the disinfectant.

c) Wash your gloved hands with soap and water and rinse thoroughly.

d) Remove the gloves and hand them up by the cuffs to dry.

e) Wash your hands.

f) Test the gloves for holes.

Important Points about collecting Specimen

1. The specimen must be taken in a sterile manner to avoid contamination.

2. The swab, collecting bottle, or container must be sterile.

3. Be careful to take the correct type of specimen. It is no use taking a sample of saliva if sputum is required. When taking swabs, make sure that the diseased area is swabbed and not the surrounding area, which may be infected with normal commensal organisms but not those causing the disease.

4. Take care not to contaminate the specimen. It should be exposed for the least possible time before being placed in the collecting bottle or tube. This should be properly closed with a sterile cotton - wool plug or screw cap, so that the specimen can be transported to the laboratory without fear of contamination.

5. Taking the specimen must not harm the patient. This is why catheter specimens of urine are not often taken, as they occasionally cause infection.

6. Make sure the specimen is correctly labelled with the patient's full name. Many serious mistakes have been caused by not doing this as soon as possible, after taking the specimen.

7. Specimens must be taken to the laboratory for examination as soon as possible. Some microbes are delicate and die rapidly if the specimen is left

to stand at room temperature or refrigerate. If it is impossible for the specimen to be delivered to the laboratory immediately, because it is taken at night or during the week - end, it should be kept safe in a suitable place at the correct temperature. Some laboratories issue special transport media or conservation media into which the specimen should be obtained from the laboratory and kept in the ward office where they can easily be obtained. Each specimen should be sent to the laboratory with an fully completed request form signed by a doctor.

8. When an urgent result is required, or in the case of CSF and other body fluids which are particularly valuable specimens, it is important to make sure that the laboratory receives them at a time when they can be examined satisfactorily.

   For most laboratories, the last hour of the working day should be avoided; it is a rush-hour. Specimens should be sent to the laboratory as early in the day as possible; and a phone call to warn the laboratory to expect a particularly important specimen will often help. Few laboratories are able to provide a 24 hour service, and specimens are often wasted because they arrive at the laboratory too late or after the staff have gone home.

9. Some specimens are dangerous to handle. Plastic bags, which can be sealed, should be used to transport these.

10. When a specimen is discarded, it should be disposed of safely and hygienically.

Precautions for laboratory workers

1. Wear gloves when handling infectious material or where there is a possibility of exposure to blood fluids that are HIV or HBV infected.

2. Discard contaminated gloves into bin.

3. Do not touch your nose, eyes or other exposed membranes or skin with gloved hands.

4. Do not leave the workplace or walk around the laboratory wearing gloves.

5. If any contamination occurs, wash your hands with soap and water.

6. Ideally, an apron or an overcoat should be worn in the laboratory. This must be removed before leaving the laboratory.

7. Disinfect work surfaces when procedures are completed and at the end of each working day. An effective all purpose disinfectant is a hypochlorite solution with a concentration of 0.1% available chlorine (1 gm/litre, 1,000 ppm)

8. Place used needles, syringes inside a puncture resistant container.

9. Never pipette by mouth.

10. Perform all technical procedures in a way that minimizes the risk of creating aerosols, splashes or spills.

11. Do not eat, drink, smoke, apply cosmetics or store food in the laboratory.

THE COLLECTION OF SPECIMENS FOR BACTERIOLOGICAL EXAMINATION

Bacteriological Examination

Bacteriological diagnosis is made by culture examination - identifying microbes grown from specimens taken from the patient and by serological examination - looking for antibodies to various microbes in the patient's serum.

Culture Examination

The following are the specimens most often used :

Swabs - of cotton wool, on a wooden or plastic stick. These must of course be sterile. They are used for surface specimens such as the skin, mouth, conjunctiva, and vagina, infected wounds, and pus from boils and abscesses.

Urine - four methods of urine collection are :

* clean - voided midstream
* bag urine / clean catch
* bladder catheterisation
* suprapubic aspirate

NB : transport to laboratory without delay. If a delay in transportation is expected, refrigerate.

1. **Midstream specimen (MSU)**

   The midstream specimen is collected by voiding 100-200 mls of urine into toilet bowl, then using a sterile specimen container to collect mid stream of urine.

2. **Clean Catch or Bag Urine**

   Clean Catch specimens are only performed when the collection of an MSU is not possible. The external genitalia should be cleaned with soap and water, rinsed and dried. The container used to collect the specimen should be clean or sterile, e.g. bedpan, urinal dish.

3. **Bladder catheterization**

   Catheterization for the sole purpose of collecting urine for microscopy should be avoided as much as possible to prevent the introduction of bacteria.

4. Suprapubic aspiration should be done according to sterile procedure.

Faeces : Faeces always contain large numbers of normal microbes apart from those which may be causing disease. It is not possible, or necessary, to obtain a sterile specimen. The patient should pass a motion into a bedpan or a wide - mouthed container; part of this, about the size of a walnut, is then removed into a screw - cap jar by means of a wooden spatula.

Sputum : The specimen should include lumps of muscoid sputum and not merely watery saliva. It is best collected in a wide - moth disposable container with a screw cap, so that the specimen will not spill when being taken to the laboratory.

Vaginal, urethral, and wound swabs; Unless they are taken straight to the laboratory immediately, these should be broken into transport medium.

Post - Nasal Swabs : Often used in suspected whooping cough the swab, which is bent at the end is passed behind the urula to the post-nasal mucous membrane. This has to be done quickly and gently.

Pus : Send a few drops of the actual pus whenever possible. If a swab is used, make sure that this is taken from the pus and not the surrounding skin.

Procedures that carry a risk of potential HIV exposure

Procedure	Person at risk	Mode of transmission
Collection of blood sample	patient	- Contaminated needles - Contaminated hands or gloves of health worker
	Health worker	- Skin puncture by needle or broken specimen container - Contamination of hands by blood
Transfer of specimens (within Laboratory)	Laboratory personnel Transport worker	- Contaminated exterior of - Broken container - Spill or splash of specimen
HIV serology and virology	Laboratory personnel	- Skin puncture or contamination of skin or mucous membrane - Contaminated exterior of specimen container - Contaminated work surface - Spill or splash of specimen - Broken specimen container - Perforated gloves
Cleaning and maintenance	Laboratory personnel Support staff	- Skin puncture or skin contamination - Spills or splashes - Contaminated work surface
Water disposal	Laboratory personnel Support staff Transport worker Public	- Contact with contaminated waste - Puncture wounds and cuts
Shipment of Specimens (to other centres)	Transport Worker Postal worker Public	- Broken or leaking specimen containers and packaging

Virocides

1. Sodium Hypochlorite

(T. C. L. Household bleach / liquid chlorine)

For Small spills

Dilution : 1% Sodium Hypochlorite
Liquid : 1 Part in 100 parts of water
Powder : 1.5 gm per litre of water

For large spills : Or to clean grossly contaminated Equipment / Floor etc.

Dilution : 10% Sodium Hypochlorite
Liquid : 10% 1 part in 100 parts of water
Powder : 7 gms per litre of water

2. 70% Ethyl I / Isopropyl 1 / Alcohol
3. 3% - 6% Hydrogen peroxide
4. 2% Glutaraldehyde (Cydex)
5. 5% Formaldehyde (50 gms per litre) 4% formaldehyde
6. 3% Lysol or phenol
7. 2.5% Povidonc iodine

Important points to remember

1. Clean equipment before putting them to disinfectants.
2. Keep it for 20-30 minutes as instructed by manufacturers.
3. Rinse all items with sterile water / boiled water, thoroughly before use.
4. Wear gloves / Mask / eye wear to protect your skin and eyes (cs - Glutareldehydc / Formaldehyde.)
5. All chemicals affect the skin integrity.
6. Chlorine compounds are very unsuitable
7. Use freshly prepared solution or store it in covered brown bottles for up to 30 days.

   The bottle must be tightly capped between use.

Disinfectant Policy

* use disposable articles wherever possible.
* Use 'Household' rubber gloves when handling disinfectants and detergents.
* Never dilute the disinfectant. It is supplied at the correct strength.

* Disinfect by heat all non - disposable articles whenever practicable.

* Whenever possible, clean with hot water and detergent first.

* Clearsol is the disinfectant of choice unless otherwise indicated.

* If immediate cleaning is not possible articles should be soaked in clearsol.

* All heat - tolerant non - disposable articles should be pasteurized.

* Body fluid spillage on ward floors should be mopped up with disposable paper towel then washed over with hot water and detergent. Disinfectant is not required.

* Wash all non disposable articles in detergent and water to remove debris, dry and return to CSS.

UNIVERSAL PRECAUTIONS IN SPECIAL SITUATIONS

Laboratories :-

Nurses may frequently have to work in laboratories or handle specimens in preparation for laboratory analysis. Laboratory workers are at risk of infection because they handle large amounts of blood and other fluids which can transmit HIV, HBV and other blood - borne pathogens. Thus, it is extremely important that laboratory workers be informed of precautions which can prevent transmission of these pathogens. The following guidelines should be followed.

- Treat all specimens as potentially contaminated. Use one pair of gloves to process all specimens. Rubber gloves can be washed and re-used later.

- Collect, transport and hold all specimens in leakproof containers.

- Wash hands after removal of gloves, and immediately after contact with blood or other applicable fluids.

- Do not pipette specimens by mouth. Use mechanical pipettes.

- Incinerate contaminated solid wastes (microbiology and pathology waste), or autoclave before disposal. Burning or burial in a pit which is 7 feet deep and at least 30 feet from a water source can also be done, but is less desirable.

- Put liquid wastes down a sink into a closed sewer system. If there is no working sewer, treat potentially contaminated liquid wastes the same as solids.

- Collect, transport and keep all specimens in leakproof containers.

- Clean up spills with bleach.

Specific situations where extra care is needed

Accident and emergency units

The unpredictable and emergent nature of exposures that can occur in the delivery of emergency care, requires that the appropriate protection attire and equipment be routinely available. Gloves, plastic aprons or gowns and face protection must be accessible and easy to don and wear.

Cardiopulmonary resuscitation equipment, for example, protective masks or airways must be available and training provided in their proper use and on all emergency trolleys.

Ample space and optimal levels of trained staffing are essential to ensure safe practice.

Precautions for invasive medical procedures

Invasive procedures are defined as:

- Surgical entry into tissues, cavities or organs for diagnostic or therapeutic purposes, and includes operating theatre purposes, and includes operating theatre procedures, vascular access procedures, renal dialysis.

- Vaginal or caesarian delivery (including abortion) or other invasive obstetric procedures during which bleeding may occur.

- Dental or oral surgery procedures.

All health care givers who participate in invasive procedures should routinely use appropriate protective attire to prevent skin and mucuous membrane contact with blood and body fluids of all patients.

* Gloves and fluid repellent masks should always be worn. If a glove is torn it should be removed and replaced as soon as patient safety permits.

* Protective eye wear and masks impervious to fluids, or face shields should be worn during procedures that result in splashing generation of droplets of blood or body fluids or generation of bone fragments.

* Protective apparel (gowns, aprons or overshoes) should cover skin and clothing if blood splash or spray is likely, and be made of material that provides an effective barrier.

MANAGEMENT OF PARENTERAL AND MUCUS MEMBRANE EXPOSURE OF HCW

INCIDENCE - cut injury
- needle stick injury
- other

SPLASH TO - eye, nose or mouth

1. Encourage bleeding
2. Wash with soap and water
3. Apply antiseptic
4. If it is a cut injury clean it
5. Put airtight dressing - waterproof
   - occlusive
6. If it is on the skin, but no cut or puncture wash with soap and water. apply antiseptic
7. If the eyes are contaminated rinse gently while open with saline or tap water
8. If blood gets in the mouth spit it out and then rinse mouth with water several times
9. Report accidental exposure to the supervisor / physician / I. C. N.
10. Maintain records. Accident exposure - register
11. If it is HIV/HBV exposure should inform immediately

12. Maintain confidentiality - if blood is tested - for HIV antibody, HBV.

13. Hepatitis B + ve blood or body substances exposure - hepatitis B serum to be given

14. Prevention of Hepatitis B vaccine to be given on the day of exposure and one month duration two doses

15. If HIV post exposure HCW should be counselled on the potential of HIV transmission. Reassure and maintain confidentiality

16. HIV serological test (ELISA) to be done as soon as possible

17. Counsel and give health education.

18. Prophylaxis - AZT (Azidothymidine) Zidovidine - 22 mg per day for six weeks according to physician's order. It is very expensive toxic, therefore routine investigation for WBBC/DV liver and kidney function test to be done. The test to be done 6 weeks - 3 months and 12 months.

19. Report if they develop - fever, rash and lymphadenopathy which indicate primary infection.

20. Maintain accidental exposure registers and maintain reports and records.

CARE OF PATIENTS WITH HEPATITIS B

Hepatitis B is transmitted by inoculation of the patient's blood (e.g.. by needle - stick injury) or by contamination of open cuts or abrasions with infected blood. or by blood - splashing of conjunctive or mucous membrane. The excreta and secretions of highly infectious patients may also be vehicles of infection.

The marker of infectivity for hepatitis B is the presence of one or more of viral antigens in the blood stream. These forms are the 'e' antigen (HBe) and the surface antigen (BHs). The presence of 'e' antigen is an index of high infectivity, and these patients must be nursed in isolation.

Patients without the 'e' antigen (i. e. those who are HBs antigen positive and who will probably have the 'e' antibody) are less infectious. Unless there is external bleeding, they do not normally require separate room isolation. However, care must still be taken with their blood both in the ward and elsewhere.

Hepatitis Non - A - Non - B

Laboratory markers for Non - A - Non - B hepatitis are not freely available, and patients suspected of this condition should be managed as high risk patients, at least during the acute stage of infection.

HIV Infection

Introduction

Human Immunodeficiency Virus (HIV) is the virus responsible for AIDS and related syndromes (such as progressive generalized lymphadenopathy). In the majority of patients infected, it causes a relatively minor disease without serious sequelae. The test that is performed in Sri Lanka for HIV infection detects antibody to the virus. The positive results indicate that the patient has been infected by the virus and does not distinguish between current or previous infections. It is difficult to predict when a patient who is antibody positive would convert to full blown AIDS and as such all patients who are antibody positive should be treated with caution. From the point of view of looking after the patient, care must be taken when dealing with their blood and secretion both in the ward and elsewhere. All effort must be aimed at the avoidance of needle stick injuries.

Infectivity

Infectivity of patients with HIV infections can be relatively high or low. Only those patients who are more infective (e.g.. pulmonary tuberculosis, gross diarrhea) need single room isolation. Those who are less infectious, need blood precautions and need not be nursed in isolation.

High risk groups

1. Include homosexual and also bi-sexuals
2. Intravenous drug abusers (IVDA)
3. Heterosexual contacts of patients with HIV infection
4. Children born to infected mothers
5. Patients transfused infected blood or blood products.

Objective or purpose

To protect staff from exposure to infection through blood, drainage fluids excretions or secretions from AIDS patients or items contaminated with blood drainage fluids or excretions or secretions.

Patient identification

These patients need to be identified, and the Bed Head Tickets should have a mark like a red dot. All samples sent to pathology Department have to be similarly marked. X-ray and physiotherapy request forms also must have marks of identification.

Notification

The following must be informed by the admitting doctor.

1. Ward sister who will inform her ward staff and institute proper precautions.

2. Sectional Matron.

3. Infection Control Nurse / Infection Control Officer (Microbiologist).

4. The Director of the hospital.

Patient care

Staff should be encouraged to maintain high standards of personal - hygiene for their own protection when nursing these patients.

Prevention of Infection (HIV & HEP. B)

1. Protective barrier methods, disposal of body fluids, placenta should be done.

5. Neonatal baby care units in operating theatres should have all aseptic and antiseptic methods.

6. In Labour rooms excess bleeding should be avoided. Episiotomy should be sutured, facilities for this should be available.

7. Baby suction instead of mucous extraction and other items of neonatal resuscitation should be available and avoid mouth to mouth respiration.

All these principles should be practised in antenatal clinic, gynaecological wards, labour rooms and post natal wards.

Mothers should be educated regarding the risk of HIV/HEP B and what can be done about it.

9. Blood stained secretion should be handled very carefully.

10. Baths and toilets can be used common, but should be cleaned well with sodium hypochlorite or adequate disinfection. If bed pans are used adequately cleaning and disinfected procedure should be carried out in between.

11. Mother should be reassured that she is not a hazard to her baby and be allowed for normal visits.

12. Sanitary pads / cloths stained with blood and body substances should be cleaned or discarded with universal precautions.

13. Breast milk should be given according to doctors' instructions.

Dialysis Unit

- Patients with HIV infection who have end - stage renal disease and are undergoing maintenance hemodialysis or peritoneal dialysis can be safely dialyzed when infection control precautions are used.

- When dialyzing all patients, health care workers should routinely follow universal blood and body fluid precautions.

- A patient with HIV infection need not be isolated from other patients.

- During dialysis and especially when the patient is being attached to and removed from the dialyzer, there is considerable exposure to blood and accidents that cause blood splashing are not common. Therefore additional protective measures should be taken for dialysis.

- A clear plastic bag with a hole at each end can be used to cover the arm and dialysis site. Then, if blood splashes, it is contained and should not contaminate anyone else.

- The dialyzer should be similarly covered with a plastic bag, since it may rupture and cause blood to splash. Routine procedures for care and clean-

ing of the dialysis equipment should be followed, with no additional precautions for persons with HIV infection.

- The dialysis fluid pathways of the hemodialysis machine are generally disinfected with 500 to 750 ppm sodium hypochlorite for 30 to 40 minutes, or a 1.5% to 2% solution of formaldehyde overnight.

- The dialyzer may be discarded after a single use. If the dialysis center has a dialyzer - reuse program in which a dialyzer is issued to a single patient and removed, cleaned, disinfected, and reused several times for the patient, HIV - infected patients can be included in the program. A dialyzer should never be used on more than one patient.

GUIDELINES FOR HANDLING OF THE DEAD BODY OF THE HIV/ HBV INFECTED PERSONS

1. It is very important for the nurses to be very careful when patient is critically ill. It is the duty of nurse and doctor who take care of him to give all information and guidance to his family members.

2. Socio-economic background, culture, beliefs, race, education, situations to be considered before discussion.

3. Some cultures prefer burial another cremation and some prepare to embalm the body before burial.

4. If the family members want to touch or kiss the body at a funeral they should be guided very carefully. Minimum handling of the body will prevent spreading the infection.

5. While handling the dead body all blood and body fluid precautions mentioned earlier must be carried out.

6. Minimize post mortem of known cases of HIV/AIDS or Hepatitis persons.

7. If they do post mortem universal precautions should be practiced.

8. I. C. N. Should inform the mortuary that the patient with AIDS would be sent.

9. The body will have to be placed in polythene bags obtained through the I. C. N.

10. The undertakers would be told by the mortuary that the patient had AIDS/ HEPB and for them not to embalm the body.

11. The coffin containing the polythene draped body is lined with T. C. I power (tropical chloride of lime).

12. Sealing of body is preferred but not mandatory. If the relatives so desire, the face may be shown to sympathizers.

13. I. C. N. would inform the officer in the AIDS Office who would arrange a visit to the funeral house and give instructions regards disposal.

14. Although a cremation is recommended, if a burial has been arranged the surveillance officer would instruct the relatives about precautions needed to be taken.

    e.g. depth of crypt should be 8 feet deep and the covering of the outside of coffin with T. C. I. or sodium hypochlorite / calcium hypochlorite.

DENTAL DEPARTMENTS

Dentists are exposed to the same risk of infection as their medical and nursing colleagues although there is no evidence of acquisition of HIV. All patients should be handled with care, as described below.

1. Wear gloves when working in the presence of blood or blood - stained instruments and surfaces. Most dentists now wear gloves for all procedures.

2. Cover cuts and abrasions with a waterproof dressing.

3. Heat-disinfect instruments, preferably autoclave, put in boiling water for 5-10 minutes. is an alternative for this instruments not used for surgical procedures, provided it is correctly carried out.

4. Whenever there is a need for high - speed or ultrasonic instrumentation, high velocity suction should be used and eye protection should be worn.

5. Use fresh local anaesthetic cartridge and disposable needle for each patient.

6. Work surfaces should be cleaned with hypochlorite or similar chlorine releasing solution (1000 ppm av $C1_2$) or 70% ethanol, after treating each patient.

High - risk patients' or known carriers

1. Patient should be last on list.

2. Gloves, plastic apron and eye - protection should be worn by dentist and assistant.

3. A high - volume aspirator should be used on all occasions. where possible, use conventional low - speed hand - pieces of a sterilizable type and the traditional methods of scaling.

4. Patient should wear a disposable bib. Mouthwashes should be dispensed in disposable cups.

5. Cleaning and treatment of instruments should be as described above and waste should be discarded in an appropriate plastic bag for incineration. Needles should be disposed of in a puncture - proof carrier and should be incinerated.

6. For impression, use a polymer material instead of alginate and immerse in 2% glutaraldehyder or 1000 ppm hypochiorite for at least 10 minutes before sending to technician.

7. If hepatitis B infected person or carrier is suspected, the dentist should preferably have been immunized or known to have a protective antibody level.

Surgical Operations

These precautions are required for 'high risk' and known HIV antibody or HBs AG positive.

1. It is necessary to place patient last on the operating list.

2. Pre-operative shaving should be avoided. Wound drainage should be avoided if possible. If drainage is considered necessary closed rather than

open wound drainage is recommended. Blood should be cleaned off the patient's skin as far as possible at the end of the operation, and a wound dressing used that will contain exudate with an impervious outer covering.

3. Unnecessary equipment should be removed from the zone of contamination in the theatre in order to produce the amount of decontamination required after the operation. Disposable drapes should be used and the mattress wrapped in a plastic sheet.

4. A disposable plastic apron should be worn under the gown or a water impermeable gown should be worn by the scrubbed team. If a plastic apron is used, a gown with water impermeable sleeves should be worn if gross contamination of sleeves with blood is likely.

5. The surgical team should wear two pairs of gloves, and unhealed cuts or lesions should be covered with a waterproof dressing.

6. Spectacles preferably with side pieces, goggles or a visor should be worn to avoid conjunctival contamination / splashes.

7. Needles, syringes, scalpel blades should be handled in a kidney tray.

Protocol for MRSA

in Theatres

I. **Two scouts needed:**

a. One inside the Operating Theatre to attend to the needs of the patient and scrubbed team members ;

b. One outside the OT to collect items needed by the team in the OT.

II. **Operating Room :**

a. Turn air - conditioning to outside air;

b. Remove excess equipment from the OT.

III. **Team members inside the OT to wear :**

Gloves

Masks ..... must be removed before leaving the OT

Cap .... must be changed at completion of case before leaving the OT.

IV. **Terminal cleaning**

a. Contaminated garbage placed in yellow plastic bag and placed in same at end of case.

b. Linen placed into large clear plastic bags and placed into linen bag at end of case.

c. Instruments are taken directly to TSSU. The instruments are left in the designated area and identified with a marker.

V. **At the completion of the case**

a. Instruments that cannot go through the tunnel washer are soaked in AIDAL for twenty minutes.

b. Sharps (Scalpel blades and needles) are placed into small sharps container and placed into contaminated waste plastic bag.

c. Furniture is washed with soap and water by nursing staff.

d. Floor is washed with soap and water by the porters.

e. Air conditioning : at the completion of the case, return air-conditioning to outside air.

Recovery

I. Patients need isolation

a. Staff wear protective apparel as for OT staff.

b. Following transfer of the patient to the ward all non disposable equipment is washed with soap and water.

c. Following transfer of the patient to the ward, the entire trolley is washed with soap and water, after returning to Recovery before placing a clean sheet on it.

d. All disposable equipment (mask, suckers etc.) is discarded.

e. All garbage is disposed of as contaminated waste.

THE INFECTION CONTROL TEAM

Infection control team (ICT) is the vital body in the prevention of infections care institutions or the community.

The team could be appointed either permanently or temporarily for the needs and availability of the institutions or national levels.

DIAGRAM OF INFECTION CONTROL TEAM

MOH
RDHS
PDHS
DGHS

Physician Surgeon
V. O. G. Paediatrician

Microbiologist Bacteriologist
(Infection control
Chairperson)

DGHS Laboratory
Technologist

Chairperson
of I. C. T.

Infection control Nurse
Liaison Nurse

Epidemiologist
PHI
FHW

DGHS
Director
Med. Suptd
D. M. O

Director of Nursing
Hosp. Grade
No. Grade 1
No. Gr. 1
Supdt. Nurse.

Activities and Responsibilities of the I. C. T

The team has interpreting and implementing policies and procedures for prevention of transmission of HIV/AIDS and Hepatitis B in their institution.

- To interpret policies and implement procedures for the surveillance of HIV Hepatitis B and Nosocomial infections

- To establish, develop and coordinate a standardised effective system of patient care precautions

- To develop a practical system for monitoring. reporting evaluating and recording hospital associated infections amongst patients and hospital personnel.

- To educate staff members in infection control policies and procedures.

- To develop and periodically review written standards for hospital sanitation and medical asepsis.

- To assist in educational and research programmes related to infection control and epidemiology.

- To provide assistance in the development of the employee health programme

- To provide and maintain universal precautions and policies with regard to Hepatitis B, HIV/AIDS

- To record and report incidence of all communicable diseases to the provincial committee and to the infection control central committee.

- To establish close communication systems among the I. C. O., I. C. N. and laboratory staff

- To maintain extreme confidentiality in recording and reporting systems with regard to HIV/AIDS surveillance

- To review all cases of accidental exposure in the institution and take measures to prevent such accidents in future.

- To institute proper care of the exposed health care workers.

Duties of the Infection Control Nursing Officer

The infection control nurse is the key person in infection control work. Her main tasks are:-

1) The surveillance of hospital infections.

2) Daily follow-up of infection control situation in hospital

3) The development of hospital infection control procedures

4) Informing the personnel on infection rates

5) Investigation of the outbreaks

6) Training of the personnel in infection control

7) Working as secretary of the infection control committees.

1. Surveillance of hospital infections

- The ICN supervises the personnel in gathering data from infections.

- She must be aware of hospital infection rates of the wards and clinics.

- The data from infections are sent to her and she keeps the files on infections, counts the infection rates for each category

- E.g. urinary tract infections per all patients treat, wound infections according to operative wound classifications. (e.g.. infected wounds in clean operations per all clean operations)

- She should analyze and assess the information gathered in cooperation with the infection control officer

- She gives information of infections to the infection control committee and also to the wards periodically (e.g.. monthly) and also at other times when necessary

- She also gathers information of the infections of the personnel.

2. Daily follow - up of the epidemiological situation in hospital

- follow-up of new infections

- follow-up bacteriological samples taken from patients

- The ICN should take necessary measures to stop the epidemics in cooperation with the infection control officer and ward personnel

3. The development of infection control policies

- The purpose of this work is to see that all patient care practices are done properly and that the principles of infection control are taken into account.

- The ICN keeps up and develops the written forms for infection control practices for hospital wards. An 'infection control method book' that describes the correct and agreed patient care practices, should exist in each ward.

4. Informing the personnel on infection rates

- The ICN works in cooperation with ICO and gives information to the ICC and ward personnel on occurrence of infections

  e.g.. monthly, or at other times, if necessary.

5. Investigation of the outbreak.

- The ICN should keep her eyes open for possible infection outbreaks, consult the ICO and in cooperation with him try to find methods to combat outbreaks.

6. Training of the personnel in infection control

- Minor staff

- Advising patients and visitors in infection, prevention and behaviour in hospital (ward rules for visitors, handwashing of the patients and Visitors, etc.)

7. Working as secretary of the infection control committee

- The ICN should bring infection control problems and other matters dealing with infection control to the monthly meeting of the infection control committee. The ICC may keep their meetings also more often, when necessary, e.g.. at the times of outbreaks.

- She should inform the personnel and especially the liaison nurse of the wards on the ICC decisions.

LIAISON NURSE :

A liaison nurse must be selected for each ward.

1) She is responsible for implementation of the infection control recommendations given to the ward.

2) The liaison nurse is the key person in infection control work in her own ward.

3) She is the key person in surveillance of hospital infections in her own ward.

4) She supervises the staff in gathering data from infections.

5) She must be aware of hospital infection rate of her ward.

6) She must send the data from infections to the infection control nurse.

7) She should analyze and assess the information gathered in cooperation with infection control nurse.

8) She gives information of infections to the infection control nurse.

9) She gathers information of the infections of the staff.

10) She should take necessary measures to stop the epidemics in cooperation with the infection control nurse and ward staff.

11) She has to take care that all patient care practices are done properly and that the principles of infection control are taken into account.

12) She should plan together with infection control nurse instructions which describe the correct agreed patient care practices. These instructions should be accepted by infection control officer and infection control committee before taking into use.

13) She should inform the ward staff on infection rates.

14) She should train the ward staff in infection control.

15) She should work in cooperation with infection control nurse.

Definitions

i. **Antiseptic** :- A chemical which either inhibits the growth of micro-organisms or destroys them. This term refers to agents used on living tissue.

ii. **Cleaning** - The removal of all visible dust, soil and any other foreign material.

iii. **Decontamination** :- The process of removing disease producing micro - organisms: rarely kills all spores; disinfectants are used on inanimate objects as opposed to antiseptics which are used on living tissue.

iv. **Disinfection** :- Destruction of pathogenic organisms in the non - sporing state.

v. **Heat** :- Is a form of kinetic energy produced by molecular motion; heat is transmitted by conduction, convection or radiation. This is the most economical means of sterilization.

vi. **Pasteurization (Sanitization)**:- The distraction of susceptible non - sporing organisms by mild heat treatment at approximately 70 °C. This process results in a reduction in the microbial population on an inanimate object to a safe or relatively safe level.

vii. **Pyrogen** :- A chemically complex, heat stable by product of bacterial origin that causes a rise in body temperature after injection.

viii. **Spore** :- The reproductive element of one of the lower organisms.

ix. **Steam** :- Water in the gaseous state. Boiling kills organisms in the vegetative state only. Is a form of disinfection, not of sterilization. Temperatures of 100 °C do not kill spores.

x. **Sterilization** :- Any process that destroys all forms of microbial life i. e. bacteria, viruses, spores, and fungi.

Terminology & Definitions

Aerobic - Bacteria which need oxygen in order to multiply.

Anaerobic - Bacterial which are capable of multiplying in the absence of oxygen.

Aetiology - Study of the causes of diseases.

AIDS - Abbreviation for 'Acquired Immune Deficiency Syndrome' a serious disease caused by the virus, HIV, which destroys the immune defenses of the body, which is then subject to serious infections and certain cancers such as kaposi's sarcoma.

Allergy - An atypical reaction of the body tissues due to sensitisation by an antigen.

Antibiotic - A substance produced by a bacterium or fungus which prevents the growth of or kills other microorganisms. Nowadays the word is sometimes used to include chemotherapeutic substances not produced by other living organisms, such as sulphonamides.

Antibody - A substance formed by the body tissues which reacts with and neutralises an antigen. Antibodies are formed as a result of stimulation by antigens. Agglutinins, antitoxins, ospenins, and precipitins are examples of different types of antibody.

Antigen - A substance which, when introduced into the body, will stimulate the production of antibodies. Most antigens are proteins; some are polysaccharide.

Antimetabolite drugs - Drugs which interfere with the metabolic processes of the body cells.

Antisepsis - The prevention of infection by application of a chemical substance which kills or prevents the growth of microbes.

Articles can be grouped into three sections according to their use in patient care:

i. Sterile items :- are items that will touch normally sterile tissues (e.g.. surgical instruments).

ii. Disinfected Items :- These are items that will touch mucous membranes (e.g.. respiratory therapy equipment, gastroscopy equipment). However, these items should be free of most vegetative bacteria. A chemical solution (disinfectant) is used for disinfecting fibre optic items.

iii. Sanitised items : These are items that will touch intact skin (e.g.. bedpans, food utensils)

CHAPTER 19

MEDICO - LEGAL SERVICES

(1) OVERVIEW :

Medico - legal services in Sri Lanka is almost exclusively provided by the Ministry of Health. The State, the Judiciary, the Attorney General, the Police Department and all other governmental, semi-governmental and non - governmental departments / organizations depend mainly on the Medico - legal services provided by the Ministry of Health for the administration of Justice and for the maintenance of Law and Order in the country.

According to section 45 of the Evidence Ordinance, every Government Medical Officer is considered to be an expert in the field of Medical Science which includes Forensic Medicine. Therefore, it is important that every Government Medical Officer who engages in Medico - legal work satisfies himself/ herself that he/she has a sound knowledge of Clinical Forensic Medicine and Forensic Pathology.

The Medico - legal work in Base Hospitals and Provincial Hospitals (General and Teaching) should be in charge of a Consultant Judicial Medical Officer (Board Certified Consultant). In the absence of a Consultant, the work may be handled by an Assistant Judicial Medical Officer, holding a Diploma in

Legal Medicine or any other Grade Medical Officer, preferably the Senior Medical Officer in the Out - Patients' Department of the hospital. If the Medico - legal work is handled by a Medical officer in addition he/she must comply with the instructions as laid down in the Manual of Management of District Hospitals, Peripheral Units and Rural Hospitals.

(2) Role of the Consultant Judicial Medical Officer :

The Consultant Judicial Medical Officer handling the Medico legal work of the institution must, in addition to attending to the Clinical Medico-legal examinations, Medico-legal postmortem examinations, Exhumations and Visiting Scenes of Crimes also carry out basic Forensic Science Investigations like Histopathological studies, Smear Examinations and skeletal examinations.

The Consultant Judicial Medical Officer of the Base, Provincial Hospitals (General / Teaching) must also provide consultancy coverage to Assistant Judicial Medical Officers and Grade Medical Officers who are engaged in Medico - legal work in the district or Province. He must not only advise, guide and instruct such Medical Officers but must also in consultation with the judicial Authorities take over any Medico-legal examination (Clinical and Pathology) if he is of the opinion that the examination in question is beyond the capabilities of the Medical Officer concerned.

He will also carry out basic Science Investigations like Histopathology, Smear Examinations and Skeletal Examinations when such examinations are referred to him by Assistant Judicial Medical Officers or Grade Medical Officers in the Province or District.

The Consultant Judicial Medical Officer in concurrence with the D. G. H. S., P. D. and the R. D. may train Medical Officers from the District / Province in Medico - legal work. He may also train Labourers in postmortem techniques and Mortuary Management.

Whenever, the Consultant Judicial Medical Officer responsible for the Medico - legal services of the Institution take leave, falls ill or is unable to attend to work due to any other valid reason, then arrangements must be made with the Assistant Judicial Medical Officer or a Senior Grade Medical Officer from the O. P. D. in the Institution to cover up such work. Such acting arrangements must be communicated to the Head of the Institution.

2:1 Medico - Legal Examination (Clinical) :

Consultant Judicial Officer and other Medical Officers engaged in Medico-legal work must carry out Clinical Examinations in the following circumstances:-

a. Request of a Police Officer

Medico - legal Examination Forms (Police - 20) are issued to injured persons by the Police Department in cases of intentional violence, sexual assaults, road traffic accidents, industrial accidents, poisoning, drunkenness, consumption of drugs, insanity etc.

After the examination, the Medical Officer must hand over to the Police Department his report in the police copy of the Medico - legal Examination Form as soon as possible.

b. <u>Orders of Judges, Magistrates and other Judicial Officers:</u>

Reports on these examinations must be sent in the Medico-legal Report Form H 1135.

c. Requests of Heads of Departments, Corporations, Institutions etc.

Clinical Medico-Legal Examinations include :-

a. Taking a relevant history from the patient as to the circumstances that led to the present condition.

b. Physical examination as regards nature, size, shape, disposition and site of injury.

c. General physical examination.

d. Conducting relevant investigations.

e. Referral of patients to Specialists where necessary.

2.2 Medico-Legal Postmortem Examinations :-

These examinations are ordered by a Judge / Magistrate or an Inquirer into Sudden Deaths. They should be carried out promptly or without delay. Before performing the postmortem examination, the Medical Officer should see that the body is identified by two persons acquainted with the de-

ceased. The examination must be complete. The internal examination must include opening into all body cavities and dissecting all organs therein. All dissected internal organs must be put back into the body cavities and sewn up before the body is handed over to the relatives. If the Medical Officer has removed any organs for further studies, then he should make a note of such organs removed in the postmortem examination report.

It is mandatory that in postmortem examinations where the cause of death is not established at the end of the postmortem examination, then to take specimens from all vital organs for Histology and also remove specimens for Toxicological analysis.

All Medico-legal postmortem examinations should be carried out in mortuaries where there are basic facilities like a postmortem table, running water and adequate light. Such examinations should not be carried out after sun set in artificial light. However, if the Medical Officer is of the opinion that the delay in keeping the body over night will adversely affect the medico - Legal investigation, then he may carry out such examinations, provided there is adequate light.

It is ideal that every hospital mortuary has a refrigeration unit to store a minimum of 12 bodies. The mortuary Labourers must be trained in postmortem techniques and mortuary management.

2.3 Exhumations :-

Acting under Section 373 (2) of the Criminal Procedure Code, the Judicial Authority may order a Government Medical officer to exhume a body and carry out a postmortem examination. When Medical Officers other than Consultants are responsible for the medico-Legal services of the Institution, then such Medical Officers may carry out only the exhumation of the body and advise the Judicial Authority to refer postmortem examination to the nearest Consultant Judicial Medical Officer.

2.4 Visits to Scenes of Crime :-

All Medical Officers must visit scenes of crime at the earliest opportunity if such a request is made by a Police Officer or a Judicial Authority. Failure or delay in visiting a scene of crime can result in loss of scientific data vital for the investigation.

Conducting of postmortem examinations at the scene must be avoided as it would not be possible to carry out a satisfactory examination with the limited facilities available at the scene. Therefore, the Medical Officers must request the Judicial Authority and the investigating Police Officer to move the body to the closest hospital mortuary.

3. Role of the Admitting Officer (Out - Patients' Department) :-

3.1 The Admitting Officers at the O. P. D. in Base and Provincial (General / Teaching) Hospitals must in addition to the relevant notes made on the cover page of the Bed Head Ticket pertaining to the illness / injuries or the patient must also make special reference as to the level of consciousness, consumption of liquor (smelling / under the influence), any abnormal behaviour and briefly mention as to what was told by the patient as to how he/she sustained the injuries or became ill. The name and the signature of the Medical Officer must appear at the end of his / her notes made on the cover page of the Bed Head Ticket.

3.2 When a person is found to be dead when brought to the O. P. D. then the Medical Officer certifying the death must in addition to mentioning the name / age / sex / address of the deceased and the name / address / relationship of the person who brought the deceased to hospital must also make special reference as to whether the body was warm. cold, flaccid / rigid or decomposed. An inquest must be held into all such deaths. The name and the signature of the Medical Officer certifying the death must appear at the end of his/her notes. A special register must be maintained at the O. P. D. for those certified dead on admission.

4. Role of the House Officer :-

4.1 The notes made by all House Officers including intern Medical Officers who are "clerking" the patient must include -

(a) A relevant but a brief history as to how the patient came about the injuries or became suddenly ill. (E.g. Assaulted by Silva with a club on 01. 01. 1991 around 12.00 noon).

(b) A description of all injuries found on the patient with reference to the nature, size, shape, desposition and site of each injury.

The name and the signature of the Medical Officer must appear at the end of the notes of his/her clinical examination.

4.2 All House Officers including intern Medical Officers must give information to the Officer - charge of the Hospital Police Post or the nearest Police Station regarding the admission / or treatment of patients following intentional violence, sexual assaults, accidents, poisoning or any other situation where there is reasonable grounds to suspect that a crime has been committed on the patient or by the patient.

4.3 In the case of serious injury or illness following intentional violence or poisoning when in the opinion of the House Officer / Medical Officer, the patient may die before his statement is recorded by a Police Officer, then the House Officer / Medical Officer must inform the Magistrate of the area through the Head of the Institution and the Officer - in - charge of the Police Post or the nearest Police Station to record the dying declaration of the patient.

If however, the death is imminent then the House Officer / Medical Officer must take down in writing the statement made by the person seriously injured or ill with particular reference to the name of the assailant, nature of weapon used and the place, date and time of sustaining the injuries. In the case of poisoning a statement containing the name of the poisoner, the nature of the poison given and the place, date and time of poisoning must be mentioned.

The same procedure may be followed prior to emergency major surgery where in the opinion of the surgeon there may be a reasonable chance that the patient may not survive the surgical procedure.

4.4 The House Officers/Medical Officers certifying deaths in the wards must order inquests through the O. I. C. of the Hospital Police Post or nearest Police Station into the following deaths :-

(a) the cause of death is not known.

(b) The death is unnatural (Homicide, Suicide, Accident)

(c) Deaths related to medical and surgical procedures or when there are allegations of medical negligence.

(d) Deaths under suspicious circumstances.

(e) Deaths in Mental Hospitals, Prisoners and others held in custody.

(f) Deaths following Tetanus and Rabies.

A death within 24 hours of admission to a hospital ward is no longer a reason to order for an inquest. If the cause of death is known and is natural then the body could be released without an inquest.

In deaths where the House Officer/Medical Officer has requested an inquest, then the declaration of death form should not be filled by the House Officer/Medical Officer. However the House Officer/ Medical Officer may enter the probable cause of death on the Bed Head Ticket for the consideration of the Judicial Authority who is conducting the inquest provided that the death has not been due to intentional violence, road traffic accident or any other manner where there can be subsequent Court action.

4.5 In respect of pathological postmortem examination the House Officer / Medical Officer must satisfy the following criteria before requesting for such examinations.

(a) The cause of death must be natural and it is known to the Medical Officer / House Officer who is requesting such examination.

(b) An inquest has not been ordered into the death.

(c) The Medical Officer / House Officer certifying the death must fill the declaration of death form and enter the case of death in the appropriate column.

(d) The consent of next of kin must be obtained in writing on the Bed Head Ticket specifying the nature of your dissection. The Dissection by the Medical Officer / House officer must strictly conform to the limits of the consent obtained.

(e) The Consultant in charge of the ward and the Head of the Institution must be informed and their approval obtained.

(f) All postmortem examination findings must be entered on the Bed Head Ticket.

4.6 If specimens like blood, other body fluids, vomitus, faeces, food substances or any other substance are collected by the House Officer / Medical Officer the officer collecting such material must label them, seal them and keep them in a safe place and thereafter hand over such material to the investigating Police Officer.

4.7 It is advisable that no patient on whom a Medico-Legal Examination Form has been issued by the Police or when the Police Authorities have been already informed regarding the admission of a patient, be discharged until such patient has been seen by the Judicial Medical Officer or any other Medical Officer acting in such capacity.

(5) Surgical Procedures :

5.1 If a surgical procedure is going to alter the nature, size, shape etc. of an injury then it is the responsibility of the surgeon or the Medical Officer performing such surgery to describe the original injury in detail (supported by a diagram) on the Bed Head Ticket irrespective of as to whether such injury has already been described by the House Officer or not.

5.2 All internal findings observed by the surgeon or the Medical Officer carrying out such surgery must be entered in detail on the Bed Head Ticket.

5.3 All material removed during surgery like firearm missiles, shrapnel, parts of weapons / machinery etc. must be entered on the Bed Head Ticket by the Surgeon or the Medical Officer performing such surgery and must be handed over to the investigating Police Office or Officer-in-charge of the Hospital Police Post or the nearest Police station.

The name and the signature of the Surgeon or the Medical Officer performing such surgery must appear at the end of his/her notes made on the Bed Head Ticket.

6. Reports, Records and Fees :

6.1 All notes of examinations must be made clearly and legibly in the prescribed forms. (E.g. MLEFF, MLRR, PMRR, BHTT)

6.2 All reports sent to Courts or any other Judicial Authority must be in duplicate. A copy must be kept by the Medical Officer.

6.3 Notes and reports of examinations made by the Medical Officer is his/her personal property and must be kept under lock and key. The Medical Officer should take it with him/her when he/she is transferred from one Institution to another.

6.4 All notes and reports must be preserved for at least 25 years.

6.5 Bed Head Tickets, X-rays, Registers and other reports pertaining to Medico-Legal Examinations must be preserved in the Institution for a period of at least 25 years. This is the responsibility of the Head of the Institution.

6.6 Separate registers must be maintained for clinical medico - legal examinations and postmortem examinations by the Judicial Medical Officer or the Medical Officer responsible for such work.

6.7 On receipt of a notice or summons from a Judicial Authority to forward a report to Courts or when a request for the report is made by the Attorney General or the Police Department, the Medical Officer must make such report available without delay.

6.8 Monthly statistics of clinical medico-legal examinations, postmortem examinations, exhumations etc. must be prepared by the Judicial Medical Officer or the Medical officer responsible for the medico-legal work.

6.9 Fees are payable by the respective High courts for submitting a Medico-Legal report to Court after the examination of a patient and for conducting a postmortem examination and submitting a report to the Judicial Authority or the Inquirer into Deaths who order such examination. Such payments by the High Courts are made only once in respect of each examination.

6.10 Private Medical reports (M. L. R. and P. M. R) can be issued only at the written request of the affected person or the next of kin when such person is severely disabled or dead. A private medical report cannot be issued to a third party. The Medical Officer issuing such private reports is entitled to a fee of Rs. 125/- for which he must issue a receipt.

CHAPTER 20

:

THE ROLE OF SECONDARY & TERTIARY CARE INSTITUTIONS IN THE REFERRAL SYSTEM

INTRODUCTION

As of 31.12.1992, the curative services of the country consisted of approximately 850 institutions of various categories. Of these, 350 were Central Dispensaries, 84 were Central Dispensaries & Maternity Homes, 358 were Primary Care inpatient facilities (Rural Hospitals, Peripheral Units & District Hospitals), 22 were Base Hospitals, 07 Teaching (General) Hospitals, 09 Teaching Special Hospitals, 07 Provincial Hospitals, & 04 other Non Teaching Special Hospitals.

It has been observed that while the outpatient facilities of Primary level institutions are well patronised, the inpatient facilities especially the Maternity facilities provided at this level of institution is grossly under utilised due to patients 'bypassing' this level in favour of secondary and tertiary care institutions. This is illustrated by the bed occupancy rate in 1992, of these different categories of institutions, which was 13% for CD & Maternity Homes, 55% for Rural Hospitals, 66% for Peripheral Units, 61% for District Hospitals, 91% for Base Hospitals, 107% for Provincial Hospitals and 95% for Teaching Hospitals.

National Referral System

It is expected that a patient would in the first instance seek treatment at the Primary care facility closest to his residence. This would mean the Central Dispensary or the Outpatient Department of any other Primary level inpatient facility, and the OPD of second-

ary and tertiary care facilities in the case of those staying within the catchment area of such institutions. The same applies for those needing inpatient care.

It is expected that the AMPP or RMPP manning Primary level institutions would refer the case to a MBBS qualified doctor at the Primary care level if the need arises. He in turn would refer the patient to the closest institution with Consultants when the necessity arises.

In the case of inpatients, those needing Consultant care are transferred by ambulance.

Objectives of Secondary & Tertiary care in relation to the Referral System

(i) To support Primary Health Care services by :-

(a) Providing referral care services for patients referred from the Primary Care level.

(b) Hospital based health education programmes.

(c) Notification of notifiable diseases promptly.

(d) Training of Primary Health Care staff.

(ii) To refer back the patients as early as possible in the post acute and post operative phase for convalescence and follow up, to the Primary Care level.

(iii) To assist in the continuing education programmes of Medical Officers, Nurses and other categories of staff.

(iv) To provide visiting Consultants; services to selected Primary Care level institutions wherever possible.

(v) To provide advice on management of patients under care in the Primary Level institutions.

Problems of bypassing

Bypassing causes over utilisation of the secondary and tertiary care levels and under utilisation of resources at the Primary Care levels. The problems at the level of secondary and tertiary care level are :-

(i) Overcrowding leading to difficulties in keeping wards clean, which in turn increase the possibility of cross infection, use of costly antibiotics, longer patients stay and more overcrowding leading to a vicious cycle.

(ii) Lowering of quality of care.

(iii) Excessive pressure on the staff.

At the level of the Primary care institutions, there is gross under utilisation leading to idling staff, under utilised infrastructure etc.

When patients bypass, they and the visitors who come to see them in hospital, exert excessive pressure on the National transport system. The visitors also lose productive time.

Need for a Referral System

It is obvious that a referral system is an urgent necessity for the Health Care Delivery System of the country for more cost effective and cost efficient use of scarce resources. This has become a priority especially in the present climate of litigation regarding quality of care. However, the people of this country have enjoyed the privilege of using whatever medical care facilities they wish at any level in the referral system irrespective of the need, and a forward referral system by legislation will not be politically acceptable in the foreseeable future.

In the circumstances, a referral system by motivation would be the obvious choice. The answer to the dilemma lies in the establishment of a good back referral system coupled with a Community Education Programme as to the advantages of using Primary level facilities and the disadvantages of bypassing.

Steps in the establishment of a back referral system

The philosophy of the back referral system is, the secondary or tertiary care institution along with the institutions which refer patients to it, constitutes one referral complex. They should develop a forward and back referral system within this complex.

The Deputy Provincial Derector and the Divisional Director of Health Services along with the Heads of Institutions in the Primary care system will do a patient education programme to motivate the people to follow a referral system.

(i) The first step in the establishment of a back referral system is to call a conference preferably chaired by the DDG (MS) / Addl. DDG (MS) or in the alternative the Provincial Director of Health Services. The Director / MS / DMO of the secondary or tertiary care institution, all the Consultants, representatives of SHOO, representatives of the MOO of the outpatient department and the Heads of the peripheral institutions would participate along with the Divisional Directors of Health Services. At this initial conference, problems faced by the secondary or tertiary care institu-

tion and the Primary Care feeder institutions will be discussed. Depending on the facilities of individual Primary Care institution, the Consultants will examine the possibility of referring cases in the Post acute / Post operative phase to individual institutions and agree on what type of patients can in fact be referred back. Consensus will also be arrived at with regard to what type of visiting Consultants' clinics could be organized and in what institutions. At the same time, as far as the secondary or tertiary care. institution is concerned, some ground rules will be agreed upon for admissions, discharges and back referral.

(ii) the second step is visits by Consultants to the identified Primary Care level institutions to which the Consultants have agreed to refer back patients, in order to satisfy themselves that the necessary facilities for care of referred patients do exist. It would be ideal if the Provincial or Deputy Provincial Director accompanies the Consultants and the Divisional Director should be present during the visit. Any extra facilities necessary could be agreed upon on the spot and provided.

(iii) The next step is to establish visiting consultancy services. Visiting Consultants' services play a critical role in increasing the stature of the Primary care institution in the eyes of the community. It would be sufficient if Consultants visit once in 2 weeks or once a month. At these visits, follow up cases can also be seen along with one of the Medical officers in the institution.

(iv) The next item is to screen clinic patients and identify patients who could be referred to primary care institutions for follow up. It is vital at this point to have a patient education programme and explain to them that the necessary drugs for their follow up care would be made available at these institutions and doctors who are more experienced than Intern House Officers would see them and these doctors in the primary care institutions will in fact be better suited for follow up since they will be in the institution for around 4 years, whereas the Interns will be in the institution only for 6 months. It is also vital to ensure that necessary drugs are made available by the Provincial/Deputy Provincial Director. It should also be explained to the patient that once month or at shorter periods the Medical Officer in the periphery would be requested to refer the patient to the Consultant for an evaluation of the condition. This is in addition of course to the referral that would be forthcoming in case of necessity. For the purposes of monitoring and evaluation it is necessary to keep records of these patients and also to discourage them from by-passing the agreed upon system.

(v) The next step is to give strict instructions to the SHOO and the House Officers to refer back inpatients for post acute / operative care to the peripheral institutions. The Intern House Officers and the Senior House Officers should be instructed to always ask themselves whether the patient can be discharged or referred back to a Primary level institution. if so, a transfer form and a Diagnosis Card giving details of care given and the proposed care to be given in the periphery should be prepared. The services of the ambulances bringing in patients to the higher level institutions should be utilised on their way back to transfer these patients to smaller institutions. Here, the success of the back referral system depends on the co-operation extended by the ambulance drivers. Strict instructions should be issued by the provincial Director of Health Services that all ambulances bringing in patients to higher level institutions should be discharged at designated places and should take back patients transferred back to the institution to which the ambulances are attached, as well as to institutions on the way, inclusive of deviations within reasonable distances. Strict disciplinary action should be taken against ambulance drivers who violate instructions. It may also be cost effective if the institutional ambulance can be spared to transfer cases where necessary.

(vi) It is necessary to establish baseline statistics to monitor and evaluate the back referral system. For the purpose, it would be ideal to do a survey of patients who have by passed the system during a specified period, to get a handle as to the gravity of the problem and for purposes of follow up.

(vii) Periodic conferences say once in about 3 months initially and 6 months later on should be held, presided over by the Provincial or the Deputy Provincial Director of Health Services to monitor whether the back referral system is functioning smoothly.

Role of secondary and Tertiary institutions, in continuing medical education.

An important function of the secondary and tertiary care institutions is continuing medical education of Doctors. Nurses, Family Health Workers, and other categories of staff. In the case of Doctors and AMPP, it would be best to organize clinical societies where all the peripheral level Medical officers, R/AMPP will participate together with Divisional Directors of Health Services/Medical Officers of Health. For the purpose of travelling, the Provincial Director should authorize the use of vehicles of Divisional Directors and Medical Officers of Health to collect the others on the way wherever possible. The secondary / tertiary care institutions should be made use of as a Resource Centre for induction training and In-Service education of the staff in these institutions as well as in the Primary care institutions.

CHAPTER 21

PUBLIC RELATIONS

1. WHAT IS PUBLIC RELATIONS?

Public relations is a sustained process of promoting rapport and good relations between an institution and it's public or those that seem important.

It consists of everything that is calculated to improve mutual understanding between an institution and all with whom it comes into contact, both within and outside the institution.

The success of public relations efforts depends on performance only and not on promises, plans, intentions, advertisements, or just words. it's also not a barrier between the truth and the public.

Definition of Public Relations Practice

Public Relations Practice is the deliberate, planned and sustained effort to establish and maintain mutual understanding between an organization and its public.

Institute of Public Relations
UNITED KINGDOM

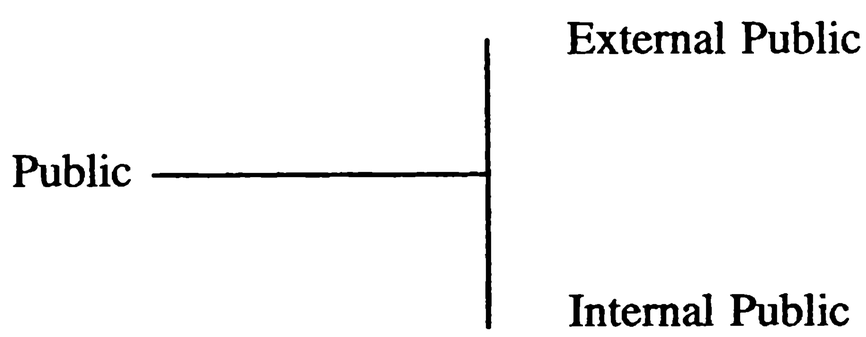
2. Importance of Public Relations to Health Care Institutions

All Health Care Institutions - Hospitals, Maternity Homes, Clinics, etc. are public institutions. These institutions are established and function to serve the needs of the public. The successful operation of services of these institutions may depend on the level of public relations that exist.

People's Expectations	Government Objectives	People's expectations & Govt. objectives on health care are more or less similar to each other

3. Publics for Public Relations Programme

Publics for public relations programme in a health institution could be categorized into two broad segments. They are -



3.1 External Public

e.g. Leaders - Religious, Political and Community Well - wishers.
School Principals and Teachers
Inpatients / Relations and friends of patients
Patients attending O. P. D. & Clinics
Field Health Staff
Media Personnel etc.

3.2 Internal Public

e.g. Consultants and other medical officers
Para Medical personnel
Nursing staff / Midwives / Attendants etc.
Clerical staff and others
Minor staff etc.

3.3 The major reasons for defining publics are

It will help

a) to identify all groups relative to the programme

b) to establish priorities within the scope of budget and resources.

c) to prepare acceptable and effective messages

d) to select appropriate media and techniques

4. What can Public Relations do?

Public Relations could assist the management in a number of ways to improve the quality of services offered by the institution.

It can help a) to achieve goodwill.

b) to improve the image and safeguard reputation.

c) to improve the friendly relationship among the staff.

4.1 Public Relations

To achieve goodwill

Public Relations practice will arouse and maintain goodwill and public interest in the activities of the institution in order to facilitate the successful operation and expansion of those activities.

It will achieve this by converting certain negative attitudes to positive attitudes.

e.g.	**Negative attitude**	**Positive attitudes**
	Hostility ----------	Cooperation
	Prejudice ----------	Acceptance
	Apathy ----------	Interest
	Ignorance ----------	Knowledge

4.2 Public Relations to improve the image and safeguard reputation

Every institution, or an organization or an individual has an 'image'

A good public relations programme aims to build a 'reasonable image' to an institution.

Mirror Image

(What you believe to be the impression outsiders have about you or on your institution)

Positive factors (+) (Factors that will help to improve the public Relations)

Public Relations Programme

Wish Image (Reasonable Image for your Institution)

Current Image

Negative factors (-)

(The impression that people outside have on you or your institution based on their experience and understanding)

(Factors that will negate the Public Relations)

4.2.1 Some positive actions that may help you to improve the image of your institution

- Respectful address to the public by hospital employees
- Avoidance of undue delay when seeking treatment
- Correct and clear instructions to patients by medical personnel pharmacists, nursing staff etc.
- Use of clean linen
- Availability of clean toilets
- Availability of comfortable chairs, benches, beds mattresses etc.
- Clean and healthy environment both outside and inside of the institution.
- Provision of health Education
- Provision of appropriate health learning materials (e.g. posters, wall charts, booklets etc.)
- Regular Community interactions
- Cleanliness of the employees including appropriate dress.
- Positive and polite ways of informing deficiencies or requirements.

  e.g. Non availability of a drug, need of a disposable syringe.

4.2.2 Few negative factors that may hinder the achievement of a reasonable image

- Over - crowding
- Disrespect shown to public
- Stinking toilets
- Non availability of drugs and equipment
- Dirty walls, flower vases, posters, wall charts and pictures.
- Improperly dressed staff
- Dirty linen
- Dirty chairs, beds, mattresses etc.
- Reluctance to listen or to accept views expressed by patients and public.
- Long waiting - lists.

The manager must also look inward at institution and should eliminate customs and practice which sometimes may be legitimate but are likely to offend public opinion or to interfere with mutual understanding.

4.3 Public Relations to improve relationship among the staff

Provision of Health care is a team effort. Every employee of a health institution is an important member of this team.

Before trying to achieve successful Public Relations with external public a good manager should improve the internal public relations.

This could be achieved by using public relations techniques to encourage and to identify employees own interest with those of the management.

Every manager or administrator should be aware of the three basic needs of his employees i. e. -

- Economic needs
- Psychological needs
- Social needs

4.3.1 Economic needs - At present there is very little that a manager could do to help his employees to fulfill their Economic Needs.

Wherever possible, within the accepted norms and approved regulations, effort should be made to assist the employees to achieve this need.

e.g. Overtime, Holiday pay, Distress lone etc.

4.3.2 Psychological needs

- By treating all employees with dignity;
- By listening to their grievances and taking appropriate action wherever possible;
- By arranging in service training programmes;
- By extending all possible facilities e.g. priority treatment to members of their families etc.
- By sharing their happiness and sorrow;
- By commending them whenever possible;
- By organising national, religious and sports activities in the institution.

A good manager could fulfill most of the psychological needs of his employees.

4.3 Social Needs

Each and every employee would like to show his importance to institution and to outside. Most of them seek leadership. Welfare societies, Death Donation Societies etc. will give them opportunity to gain leadership. Encouragement given by management to the staff in this connection will help them to achieve this need.

A good manager will never ridicule or warn an employee in the presence of other employees or public. Such action should always be confidential.

5. ALL PUBLIC RELATION PROGRAMMES SHOULD BE PLANNED.

5.1 Importance of planning public relations programme

5.1.1 to set targets for Public Relations operations against which results can be assessed.

5.1.2 to estimate the man hours and other costs involved.

5.1.3 to select priorities which will control

(i) the number and (ii) timing of different operations of the programmes

5.1.4 to decide the feasibility of carrying out the declared objectives according to the availability of (i) sufficient staff of the right calibre (ii) physical equipment such as office machines, vehicles, etc. (iii) an adequate budget.

As there are a number of constraints, for the success of the Public Relations Programme maximum effort has to be exerted on a minimum number of projects.

5.2 Six point Public Relations Planning Model

a) Appreciation of the situation

b) Defining of Objectives

c) Defining of publics

d) Selection of media and techniques and resources

e) Preparation of budget

f) Assessment of results

6. Factors that should be considered in developing communication strategies for an effective Public Relations Programme

Few lines of a Notice Board or a 750 words leaflet intended for Public Relations should be based on a well developed communication strategy.

Communication strategy provides the framework for developing and delivering messages aimed at changing existing practices.

A communication strategy should provide answers to 'six' questions.

- To whom should the message be directed?
  (Target audience specific groups)

- What message should be communicated?
  (Message content)

- How to communicate?
  (Method to be adopted)

- Which media to be used?
  (Spoken, writing, print, electronic etc.)

- Where to communicate?
  (Receptive setting)

- When to Communicate
  (Receptive time)

7. Qualities of a good Public Relations Practitioner

The following five attributes sum up the good Public Relations Practitioner no matter what his background may be.

7.1 ABILITY TO GET ON WITH ALL KINDS OF PEOPLE

This means understanding sometimes tolerating people and not flattering them. Should be able to give leadership and guidance, and not a person who creates problems. He should have immense patience.

7.2 Ability to communicate

That is he should be able to explain his message clearly by means of spoken or written words or by visual devise. Should know how to handle media, appropriately.

> **Definition of Communication**
>
> Communication is a process by which two or more people exchange ideas, facts, feelings, or impressions in ways that each gains common understanding in meaning, intent and use of message.

7.3 **Ability to organise** : That calls for patient planning and ability to identify priorities.

7.4 **Personal Integrity** : In both professional and private life. A Person who could be trusted and who will not divulge confidential information.

7.5 **Imagination** : that is a creative sense. As when designing a journal, delivering a lecture; writing a notice, speech, a script for a film or video tape, planning campaigns and seeking solutions to problems. He should also be in a position to identify any faltering in the P. R. activities and take appropriate action to remedy or rectify the situation.

Summary

What public relations practice includes

1. Everything that is calculated to improve mutual understanding between an Institution / Organization and all with whom it comes into contact, both within and outside the institution / organization.

2. Advice on the presentation of the public image of the Institution / organization.

3. Action to discover and eliminate misunderstanding between an institution/ organization and its public.

4. Action to broaden the sphere of influence of an institution / organization by appropriate publicity, advertising, exhibitions, films etc.

5. Everything directed towards improving communication between people and Institutions / Organizations.

What Public relation is not

1. It is not a barrier between the truth and the public.

2. It is not propaganda to impose a point of view regardless of truth, ethics and the public good.

3. It is not publicity aimed directly at achieving sales although public relations activities can be very helpful to sales and marketing efforts.

4. It is not composed of stunts and gimmicks. They may be useful at times to put over ideas but fail completely if used often or in isolation.

5. It is not unpaid advertising.

6. It is not merely press relations, although press relations are a very important part of most public relations programmes.

7. Public relations in health or for that matter in the public sector is non - political. It is to promote the utilisation of services through full information and not to advance the policy of any political party.

CHAPTER 22

PROFESSIONAL ETHICS

Ethics is the science of moral principles. It lays down the character and conduct of individuals and groups of individuals. Ethics is based on standards and it has in built into it, concepts of values such as 'good' and 'bad', 'right' and 'wrong' and 'desirable' and 'undesirable'. While the law demands obedience, ethics imposes conformity to a set of agreed norms

A CODE OF CONDUCT is the usual method used to set out the consensus on moral behaviour. Any person belonging to a group, who transgresses, articles in the code of conduct will invite disapproval, inquiries, penalties and even ostracism. However a code of conduct should basically be viewed as a set of guidelines within the broad principles laid down.

A code of conduct usually emphasizes a non - discriminatory service to humanity while spotlighting the rights of the recipient, the public at large and the environment. It demands competency, continuing learning, dedication, objectivity, good manners, honesty and integrity. It deals with relationships among members of the same group, between groups and also with the employer and with the general public. It sets out duties and obligations.

In the realm of medicine, ethics is concerned with the conduct and actions of the health care professionals. It is the adoption of a code of ethics that distinguishes technicians from the professionals. Doctors, Registered Medical Practitioners, Assistant Medical Practitioners and Nurses belong to recognised professions, therefore codes of conduct are necessary for

these groups. A code of conduct is of vital importance for these professions if they are to serve the public and give the people what is rightfully theirs. Adoption and implementation of such a code will ensure that these professionals will serve the common good and reverse the trend towards individualism.

Since patients in the state hospitals receive free health care, there is an unfortunate tendency among those who deliver this care to view the recipients as having little or no rights. This attitude and perception has to change. At the outset it must be made clear that there is no such thing as "Free Care". A third party, the state with the revenue collected by direct and indirect taxes, pays for the salaries, drugs, equipment, buildings etc. used. The people who receive this health care have rights and there is presently, a welcome campaign to educate them about their rights and also their obligations.

The following should serve as useful guidelines on patient's rights.

1. A patient in one's care should be treated with dignity, respect and most of all compassion, such a person should be cared for as individual with feelings, a name, a family etc.

2. The carers should be well mannered and demonstrate a genuine concern for those in their care.

3. Too often, little or no information is given to the patients or the relatives or guardians. People have a right to receive information about their health status, the probable diagnosis, the preventive measures to be taken, the therapy, investigations, prognosis and also the details of the post hospital and post - clinic care. However due care must be exercised in the transmission of the information so as not to cause unnecessary distress to the patient and relatives. Nevertheless the information should be as complete as necessary for the recipient to make a rational decision.

4. Persons have a right to confidentiality, in the consultation, examination, investigations and treatment, except very rarely when the interests of the community make it necessary to reveal this information. Records should be made available only to those who have a right of access to them. The proper exceptions to the rule of confidentiality should be laid down and there should be no abuse, or the all important relationship between the career and those cared for will be jeopardized.

5. Persons have a right to choose the mode of treatment and the various available

options should be placed before them for an informed decision. The probable risks and benefits should be presented in an understandable manner.

6. The right of referral should be granted, if this is in the best interests of the person concerned.

7. Research on patients should be permitted only after informed consent has been obtained. There should be no discrimination if participation is refused and the right to withdraw from a research project should be granted at any time.

OBLIGATIONS - People should be educated about their obligations in order to obtain their support.

1. People should cooperate full with those involved in their health care.

2. They should avoid toxic and other risk factors such as cigarette smoking, drug abuse, immoderate consumption of alcohol, immoderate diet and use of potent pharmaceuticals without proper prescription.

3. They should influence their family, especially their children and also the community, towards proper health care such as acceptance of immunization procedures and hygienic life styles.

4. People should not pollute the environment and so create health hazards for them as well as future generations.

Code of Conduct for Medical Officers, Registered Medical Practitioners, Assistant Medical Practitioners and Nurses

At the outset it must be emphasised that all these groups belong to recognised and registered professions and that this code is not a complete set of binding rules for the above categories. It sets down that society has a right to expect form the above professionals. It should be read in conjunction with the sections on "Professional ethics", "Patient's autonomy and obligations"

1. Services offered should be in the spirit of service to humanity while considering the rights or the individual and the public interest. The individual cared for is the most important person and not anyone of the carers, regardless of their stature.

2. There should be no discrimination on grounds of class, influence, race, creed or caste etc.

3. They should hold as paramount the health, welfare and satisfaction of those whom they serve and cooperate with each other to achieve these ends.

4. The career should be (a) Professionally competent, (b) dedicated to his work, (c) Honest, and also he should (d) continue with his professional learning, his knowledge, skills and attitudes should be continuously updated, in this era of rapid advance in these fields and (e) always exhibit good conduct and ethical behaviour, and by action, precept and example influence others. In the intimacy of the consultation and care he should exercise caution so that there is no impression of abuse or molestation created.

5. Good relationships should be maintained with other members of the same profession, members of other professions, and the persons who receive their services.

6. They should educate the public on matters regarding health care and they should also protect the public from misinformation and misrepresentation.

7. Each profession should treat other professions with respect and as having rights of their own and also ensure that those in the subordinate levels provide services according to their skill, training and terms of employment.

8. Since modern medicine is capable of providing more modes of health care than the state or society can afford they should ensure the optimum use of resources and also their proper allocation. This applies specially to (a) distribution of resources, to areas where the maximum number of people will benefit, (b) ordering and prescribing pharmaceuticals. This should be done on a rational and cost effective basis. (c) ordering of equipment and other technological facilities should be on a priority basis and should not be tailored to cater to individuals or attract publicity. It should be noted that in the rapidly developing field of medical technology the currently used technological devices become outdated very soon, (d) allocation of beds or dates for surgical operations, diagnostic investigations or clinic visits should be made on a just and fair basis.

9. The professionals should conform with the requirements of the law and the rules made by their employer.

10. They should provide comprehensive, promotive, preventive, curative and rehabilitative health care, to the recipient and this care should be readily accessible to the recipients.

11. A professional should maintain optimum, standards of skill and care. If incompetence to perform ones duties arises from disease or infirmity or any other reason, professional work should not be undertaken.

12. A professional should confine himself to his area of expertise and training, while at the same time assist others in their duties.

13. A professional should not use his position to harass or intimidate others.

14. A professional should use all the resources under his control to render professional services in the best interest of the recipient of his services.

15. A professional should not solicit fees, rewards, favours or gifts especially when he is in a salaried service. In no case should the carer, by behaviour or action give the impression during working hours in the hospital, that better or more concerned care will be available by payment of a fee.

16. Since we have state health care and private health care mix as accepted policy and especially since state employees are permitted private practice outside duty hours, extreme caution should be exercised in (a) not using the state facilities for private patients (b) not creating a perception that consultation privately is necessary for proper care in the state hospitals. (c) the carer performing duties and also keeping to his hours of duty in the salaried state structure (d) giving every patient the time and care they require.

17. Each professional should be a member of a professional body which not only attends to the members interests such as terms of employment, but also fosters the academic and professional development of the profession.

18. Every professional should participate actively in the education of members and students of his own profession.

19. A professional should accept the right of another professional to hold views different from his own.

20. A professional should act with his fellow professionals for the advancement and success of his professional association.

21. A code of ethics must not only be adhered to, but it should be clearly apparent that the professional is in fact adhering to it, in public and in private life.

CHAPTER 23

COMMUNITY PARTICIPATION IN HOSPITAL DEVELOPMENT

It is most desirable and very often necessary that health administration seek community participation and support to manage their hospitals.

It is well known that state health institutions are not provided all that they require by way of funds, equipment or material by the state, This is true all over the world and more so in hospital systems which are completely state subsidized. More and more such "free" hospitals are now seeking support from the community it serves to bridge the gap between what the state provides and the hospital needs.

Community support in addition to bridging the gap adds another dimension i.e. community participation. Most hospitals for long have run in complete isolation from the community it serves. They feel that the hospital belongs to the government to be used only in time of need. The hospital administrator would certainly benefit if the community feels that the hospital belongs to the community and that they are its custodians.

The medical administrator has many ways to approach the community.

1. Request a meeting with the community leaders religious heads etc. to explain to them the needs of the hospital.

2. Attend meetings of the N. G. OO and discuss with them the problems

faced by the administrators. N. G. OO. are ever willing to entertain the need of a health facility if they feel that the facility is making a genuine effort to help those in need.

3. Persuade the hospital development committee to reach the community.

There are many ways in which the general public would help the hospital.

1. Funds. It is preferable that a society or a fund raising organization approved by the Ministry of Health is entrusted to collect and hold money on behalf of the hospital. Contributions could also be made to the National Health Development fund approved by parliament and contributions to which are exempted from income tax.

2. Hard and soft furniture, Toilet requirements etc.

3. Food. it is better to discourage serving of cooked food.

4. Maintenance of wards and other areas.

5. Buildings. Buildings and extensions donated should always be according to a plan approved by the Ministry of Health and should fit into the overall hospital development plan.

CHAPTER 24

HOSPITAL HEALTH EDUCATION

1. Hospital Health Education (HHE) is a major activity of the Ministry of Health channelled and executed through curative institutions with technical guidance from the Health Education Bureau. The educational role of hospital demands new orientation of personnel in the hospitals within the context of changing concepts of both "Health" and "Education".

The "Health Care System" according to current interpretation consists of a number of inter - related and interacting subsystems made up of the individual, family, home, schools, work places, non-formal organizations and the traditional formal health care institutions. The main responsibility of safeguarding health falls on the individual, the family and the community. However, the hospital, being an integral component of the community has an educative function to perform in provision of comprehensive health care to the latter. The innate strengths of the hospitals in providing an educational role depend on a number of factors. Some of these are:

- Large network of institutions.
- The large number of personnel manning these.
- Acceptance of credibility of institutional staff in the eyes of the community.

- Captivated audiences in patients and visitors.
- Intimate nature of social contact between staff and patients.
- Living models to explain disease and its pathology.
- Wide catchment area of Secondary / Tertiary care institutions.
- Ability to mobilize community resources.
- Potential to mobilise support of the clergy for all activities.
- Desire of many voluntary agencies to support the hospital system.

H.H.E. is routinely conducted in a diffuse unorganized way. The need to streamline, direct & organise these efforts has been recognized with the emphasis on delegation of responsibility. In this context establishment of Hospital Health Education Units is warranted to localize accountability.

II. The Philosophy of Hospital Health Education.

- Hospital Health Education (HHE) is an integral component of the Total Health Education Programme which in turn is a component of the Total Health Care Programme.
- 'Health' being a social issue serves 'development' and reciprocally is served by 'development'.
- Health Education should not be narrowed down to
  - Disease education
  - Medical education
  - Patient education

III. Objectives of Hospital Health Education (HHE)

a) **General**

To promote and assist the educational role of the hospitals in preventive, promotive, curative and rehabilitative aspects of health care.

b) **Specific Objectives**

- To identify the opportunities for information, education and communication (IEC) in a hospital setting for the promotion of total health care.

- To define the roles and functions of different categories of hospital personnel in HHE.
- To identify situations, opportunities, means and methodologies appropriate for HHE efforts.
- To ensure necessary technical, managerial, logistic resource and social support for execution of HHE.
- To promote a conducive hospital environment for sustained HHE activities.
- To strengthen ongoing and initiate new patient education programmes.
- To plan, implement and evaluate the HHE programme.

iv. Patient Care and Information, Education and Communication (IEC)

v. Hospital Health Education Unit (HHEU)

- HHE is a multifaceted activity & the establishment of a centralized HHEU in an institution is necessary for organized performance and enhanced productivity.

- HHEU is expected to function as the generator and coordinator of all educational activities.

- Hospital health Education Committees functioning in curative institutions would provide for the broad framework of activities with inputs for its

  - Philosophy
  - Policies and principles
  - Resources and material
  - Staffing and training
  - Plans and programmes
  - Organization and coordination
  - Activities and tasks
  - Monitoring and evaluation

- Physical location of HHEU to take into account following for efficient functioning.

  - Centrally situated
  - Accessibility

- Convenience more for patients
- Spacious
- Adequately furnished
- Light and ventilation
- Attractive and appealing
- Adequately equipped

The HHE as the operational centre of HHE efforts has the following functions.

- Coordination function
- Motivational function
- Analytical function
- Catalytical function
- Training function
- Teaching function
- Monitoring function
- Evaluation function
- Mobilizing function
- Guidance function
- Humanizing function
- Negotiation function
- Promotional function
- Public relations function

- Minimum furniture, equipment and educational material

  - Table and 3 chairs
  - About 20 chairs or a few benches for audience
  - Almirah
  - Blackboard and Magi-board
  - Chalk and Magi - board pens
  - Books, magazines (leaflets, Pamphlets - posters)
  - AV material (Cassette player, TV, video deck, Public address system equipment, cassettes.
  - Schedule of activities training etc. to be displayed.

VI. Officer / Nurse in charge of HHE Unit

- A ward sister or senior nurse appears ideal to be in - charge of unit.
- To be selected on sound purposeful criteria. A high degree of motivation and initiative with previous experience in field of IEC preferred.
- Some of the following skills and competencies expected.
- Public relations skills
- Communication skills
- Training skills
- Counselling skills
- Organizational skills
- Coordinating skills
- Mobilizing skills
- Monitoring skills
- Team skills
- Reporting skills
- **Role or officer of Nurse in Charge of HHEU**
- Maintenance and operation of unit
- Unit to be kept open and functioning from 8.00 a. m. to 4.00 p. m. on all days except Sundays and Public Holidays.
- To assist in the planning and programming of the total HHE effort in hospitals.
- To prepare calendar of activities and work plan for HHE.
- To assist and guide educational activities in wards, clinics, OPD and other relevant places.
- To inform, educate and counsel patients referred to unit from wards, clinics and OPD.
- To initiate dialogue and discussion with relatives and visitors referred to on any specific needs.

- To maintain continuous dialogue with head of institution and other relevant managerial personnel in hospitals.

- To procure, distribute, use, renew and retain appropriate educational material.

- To maintain and operate AV equipment and material.

- To maintain operate and supervise the smooth functioning of PA system of the hospitals.

- To initiate, assist, conduct and monitor staff training and orientation programmes.

- Maintain HHE library.

- Maintain records and reports connected with monitoring and evaluation.

- To coordinate educational activities with field health workers, extension workers, social workers, and volunteers from NGOO.

- To liaise with ward sisters, sectional heads, hospital management and HHE committee.

- To generate interest, conviction and commitment in health personnel for HHE.

- To coordinate with HEB and District Health Managers through Head of Institution for requisite support and assistance.

VII. Audio Visual Aids and Material (AVAA)

Audio Visual Aids (AVAA) are universally accepted as contributing immensely to communicational and educational success. They are materials which are targeted to eyes and ears of the recipient audience, separately or collectively. It is common experience that word power and visual power used with aesthetic appeal cannot only attract and captivate but even hypnotise individuals and audiences. They provide for common well-known benefits, productivity and success. However, one has to be careful and cautious in their use for the contemporary trend of over dependency and over - expectation could lead to counter - productivity. **Remember they are only AIDS** to help and support the communicator who should use his mind and soul (mentally and spiritually) to stimulate and inspire the communicatee's conscience, wisdom and intelligence. Over-stimulation of the senses of vision and hearing can suppress the more important 6th sense - common sense - (that sense

which is common to every human being). This is the conscience. Humans can unite only at the level of conscience, which is the power behind man's supremacy in intelligence and spirituality. It is important to understand that none of the AVAA are useful and meaningful without the spoken or written word and the verbal symbols. **The verbal symbol is the life - blood of any communication effort.**

Traditionally accepted benefits and advantages in use of AVAA

- High degree of interest elicited.
- Attraction and attention.
- Easy understanding.
- Learning becomes more personal and practical.
- Helps retention and memory.
- Provides for continuity of thought.
- Saves teaching and communicating time.
- Teaching - learning becomes a fascinating event
- Helps relieving boredom in learning.

Different types of AVAA used

- Printed material
- Pictorial material
- Models, objects and specimens
- Electronic Audio-Visuals.
- Dramatised experiences - plays, puppets, role play

Production and the use of AVAA to take into consideration the following :

- Appropriateness
- Simplicity
- Economic Viability

- Sustainability
- Durability
- Retainability
- Replenishability
- Replicability
- Reliability
- Utility
- Portability

Different types of AVAA commonly used and their application in practice are given below :

AVAA and applicable method Production ideas

Wall Chart

Used for group discussion. Drawn on a single sheet of paper usually illustrating only one idea, supported by suitable wording.

Flashcards

Consists of 8-12 cards usually of A4 size with illustrations used for group discussions. Words are used only if absolutely necessary. Instructions to guide the user may be written on the reverse side.

Flip Charts

Consist of any number of pages bound together. The pages may be about 21" x 15" in size and should not be very small. Illustrations and words may be blended on the same page but the pages should not be crowded. One or two concepts per page should be the criterion.

Flannel Graphs

Separate pictorial elements cut in outline with a rough backing of sand paper to make picture returnable on a flannel cloth. a used coloured old blanket or a coloured towel. Proportion of pictures needs special attention. (e. g. picture of

an infant should be smaller than of the mother)

One prime requirement in producing AVAA is pretesting to see whether :-

- The clarity of message is maintained.
- The facts are logical.
- The sequence is correct.

Pretesting of AVAA with a similar target group to get their views before use for a larger group is very important. Final production of AVAA should be undertaken only after effecting appropriate corrections using the findings of the pretest.

Important considerations when using AVAA

- Do materials give a true picture of the ideas they present.
- Do they contribute meaningful content to the topic under study.
- Is the user competent, knowledgeable and skillful?
- Is the material appropriate for the age, intelligence, experience, culture and needs of audience?
- Is the physical condition of material satisfactory?
- Do the AVAA make the learners better thinkers and visionaries?
- Do they help improvement of human relations?
- Is the AVA worth the time, effort, money and material involved?
- Do they appeal to the conscience, intelligence and experiences of learners?

VIII. Role of Public Address system (PA System)

PA system is only an aid in education and information which when used intelligently and methodically is an enormous asset. PA system is a good servant but a bad master.

Very useful in institutional functioning where -

- Large numbers of providers and recipients are involved.
- Diversity and complexity of programmes exist.
- Geographical spread of buildings is wide and expansive.
- Urgency, immediacy and rate of turnover matter.

Basic Uses of PA system in areas of

- Management
- Instruction
- Information
- Education
- Entertainment and relaxation
- Guidance
- Alerting and appealing
- For variety and diversity
- Mobilization and participation

Different steps in the process of installation of PA system and consequent operation

- Decision to install PA system by the Management
  (HHE Committee)
- Mobilization of resources.
- Procurement of equipment. (get help of HEB for specifications and other technical guidance)
- Installation of system.
- Training of personnel on equipment operation.
- Decisions on
  - Philosophy

- Objectives
- Subjects to be included
- Content
- Messages
- Design and lay out
- Cassettes
- Continuity of operation
- Captivation strategy
- Retention and replenishment of cassettes
- Maintenance and repair
- Continuous monitoring and evaluation.

    - The 'PA system' should succeed in touching and awakening the minds and souls of basically the following categories of audiences.
        - Patients - both indoor and outdoor
        - Visitors and relatives
        - Health personnel of the curative institutions
        - Other related workers such as volunteers
        - Management categories and community leaders

Some important dimensions in PA system communication

- Time and cost effective
- Reach large numbers over a large territory
- Ideal for general common messages but drawback for specific messages.
- Messages are "audience anonymous"
- Possibility of contradictions, conflict and confusion.
- Overuse, monotony and bad timing may be handicaps.
- Useful for information giving and to create awareness.
- Not powerful enough to change and influence emotionally derived behaviours.

- Needs supplementary assistance from inter - personal communication methods.

Planned, programmed and organized use of PA system could help the institution in areas of :-

- Transmitting technical messages on preventive, promotive, curative and rehabilitative aspects of health care.
- Promotion of public relations (PR)
- Streamlining of services
- Patient Education.
- Visitor Education.
- Promotion of team spirit and work.
- Creation of awareness of duties and responsibilities of patients and visitors.
- Promotion of hospital image and credibility

Greater productivity expected with messages which are;

- Short and sweet
- Subtle and soft
- Inspiring and attractive
- Practical and relevant
- Non - threatening and non - challenging

ix. Hospital Health Education inputs (Routine work and calendar of activities)

- HHE is a continuous, un-interrupted, innate and integrated activity, the challenge being to improve and elevate performance, both quantitatively and qualitatively.
- All hospital workers have inherent educational responsibilities, the drawback being their ignorance and lack of such perception.
- All human interactions and dialogue have educational relevance. In that the major component of worker intervention relates to dialogue, discussion, influence and motivation.

- Educational activity in hospitals may be :
  - Routine
  - Incidental / Casual
  - Programmed / Planned.

X. Implementation procedure and steps

- Sensitization of Hospital Management on the need for HHE, IEC and establishment of HHE unit.
- Establishment of HHE Committee.
- Orientation of Senior Managers, Middle Level Categories and unit Heads on the Philosophy, Principles, Objectives, Planning and Programming of HHE activities.
- Review of past activities
- Selection of personnel for specific job functions in HHE.
- Identification of in-service training programmes for different categories of workers.
- Delineation of objectives for training.
- Developing calendar of activities.
- Identification of content areas of each programme.
- Identification of methodologies

Guide to selection of content for training.

Depending on the trainee group and the availability of time the following topics to be considered.

- Philosophy underlying programme
- Concepts of Health and Disease
- Concept of Education
- Health and Human Behaviour

- Concept of Hospital
- Concept of patient and patient care
- Communication
- Methods of Health Education
- Opportunities for HHE
- A. V. materials
- H. H. E. Messages
- Worker Motivation
- Team effort
- Integrated approaches for HHE
- Public relations
- Healthful Hospital living
- Ethics and morals
- Humanizing Health Care
- Community Mobilization
- Emerging Health Problems
- Health and Humanism
- Health and Development

Suggested routine inputs from HHE Unit and Nurse - in charge of Unit

8.00 a. m. - 8.30 a. m. - Health messages through PA system

8.30 a. m. - 10.30 a. m. - Visits to wards, clinics and monitoring of HHE activities

10.30 a. m. - 12 noon - Counselling and psychological assistance to patients referred from OPD and wards.

12.00 noon	- 1.00 p. m.	-	Health messages through PA system Informal contact with relatives of patients.
2.00 p. m.	- 2.30 p. m.	-	HHE Unit - Office work Library work - Evaluation work
2.30 p. m.	- 3.30 p. m.	-	Visits to wards, clinics and guidance and assistance to other workers in HHE.
3.30 p. m.	- 4.00 p. m.	-	Discussion with Senior Managers in Hospital (on work - progress problems - alternatives - plans - activities).

GENERAL ADMINISTRATIVE SERVICES

CHAPTER 25

MANAGEMENT

INTRODUCTORY MODULE

Directors of Teaching Hospitals, Provincial/General Hospitals, Specialized Hospitals and Base Hospitals are responsible for efficient and effective management of their institutions to ensure quality care is provided for the patients who seek treatment at these institutions. Hence to achieve this goal all directors, must strive to understand the concepts of management and put into practice, the principles of management in dealing with, specially, the human resources, as well as other resources available to them to run the hospitals.

All those in charge of the hospitals have to manage people who work for the organization as well as manage the money, materials and facilities available to them for effective running of these organizations. This chapter will deal with the overview of the management process and how it applies to hospital management. Subsequent chapters will deal in depth with the various aspects of management e.g., supervision, drugs management etc.

Hospital is a highly complex organization which is responsible to provide comprehensive health care to the population served by this institution i. e. to community living in the catchment areas around the hospital which may vary from two miles to 50 miles depending on where the next referral, secondary or tertiary hospital is.

But hospitals though varying in complexities share many of the following features -

- They are complex, having many departments and professions; and are not easy to supervise and control.

- They are labour intensive i. e., they require a large work force because of the various individual skills and forms of care that are required.

- They are dealing with vital issues of life, illness and deaths which cause anxiety tension and deep emotions. Society depends on their quality and accessibility.

- They are relatively expensive and are under pressure to be managed with least expenses and come under strict public scrutiny.

- They frequently have to change in response to new patterns of illnesses, modified equipment and techniques, rising public expectations, financial pressures and their own professional search for excellence.

Hence it is obvious that high quality of management is needed to provide comprehensive health care efficiently and effectively to the community it is responsible to.

Hospital management may be defined as a process of application of management.

- Planning - P
- Organizing - O
- Leading - L
- Implementing - I
- Co-ordinating - C
- Evaluating - E

"POLICE"

Let us examine and define what management is.

If one looks at management texts there is no single agreed definition of Management, various texts give various definitions. Some of them are -

- Management is getting things done.

- Management is efficient use of resources

- Management is deciding what should be done and getting others to do it..

- Management is purposeful and effective use of resources i. e. men, materials and money for fulfilling predetermined objectives.

- Management is guiding human and physical resources into dynamic organization - units which attain their objectives to the satisfaction of those services and with a high degree of morale and sense of attainment as a part of those rendering services.

Hence from above it is seen that definitions vary from simple to highly complex ones.

For the purpose of hospital management the following definition may suffice.

Management is a process of using men, material and money efficiently and effectively in order to achieve a set of goals or objectives.

Good Management is to the organization, what health is to the body to the smooth functioning of all its parts. It highlights priorities, adapts services to needs and changing situations, makes the most of limited resources, improves the structure and quality of services and maintains high staff morale.

PROCESS OF MANAGEMENT

To be a good hospitals manager one must understand the process of management. Briefly they could be described as follows:

PLANNING FUNCTION

Principle's of the planning process can be applied to any system or subsystem of the hospital.

There are five steps in the planning process.

Step 1 - **Looking at the situation or situation analysis**

Here the managers look at facts and figures regarding any part of the hospital - i. e. gathering information through official or unofficial channels with regard to

1) Medical . Nursing Sérvices
2) Supporting services
3) General Administration
4) Utility services

Then relevant data is gathered tabulated and analyzed and interpreted.

Step II - **Prioritization**

Here, according to the service needs from the data available on a priority basis he could set about planning for provision of services.

Step III - **Setting objectives and targets**

For each of the services / department he should set goals, objectives and targets to be achieved during a given period of time.

Step IV - **Constraint analysis**

Once he has set goals and objectives he must analyze to find out the limitations / constraints to achieving various objectives and targets. This is called constraint analysis. After which a detailed plan of action has to be made so that he will know what he has to do to achieve the objectives and targets set.

Step V - **Developing action plans**

Essentially for each activity the following questions must be looked into and answered.

–	What is done	Purpose
–	Why is it done?	
–	What else might be done	
–	What should be done	
–	Who does it	Person
–	Why does that person do it	
–	Who else might do it	
–	Who should do it	
–	What things do we have	materials
–	What things do we need	
–	Where is it done	place
–	Where might it be done	
–	Where should it be done	
–	When is it done	Time
–	When might it be done)	
–	When should it be done	

Next is that once plans are made and finalized it must be written down.

ORGANIZING FUNCTION

It involves establishment of internal organization structures. It lays down line and staff relationships. It spells out roles and functions. It involves a grouping of activities. Assignments of these groups of activities to managers. Delegation of authority to carry out these activities.

LEADING FUNCTION

This involves motivation and leadership and staff development. Getting work through others is not easy. This is the most difficult task that the manager has to do. He himself has to be a good exemplary leader if one is to function as a good manager.

IMPLEMENTING FUNCTION

Here the manager has to co-ordinate activities, establish proper channels of communications, make decisions, supervise activities and personnel and monitor to see that goals and targets are being reached. This involves smooth functioning of the organization.

CONTROLLING & EVALUATING FUNCTIONS

This is the last function of the management process. It focuses on both the present (Concurrent) and the past performance of the organization.

Major concern is to find out whether the objectives and targets are being reached. If not, why not and what corrective actions can be made or what lessons can be learnt for future planning. This concerns with the efficiency and effectiveness of the organization.

SUMMARY : WHAT DO MANAGERS DO

1. Identify needs - Situational analysis
2. Problem identification and prioritization
3. Set objectives and targets
4. Do a constraint analysis
5. Draw up a detail basic questions

   Answering basic questions

   WHY are we doing this
   WHAT are we going to do?
   WHO will do it?
   WHICH things do we need?
   HOW is it to be done?
   WHERE will it be done?
   WHEN will it be done

   } PLANNING

6. Then implement the plan by :

   Coordinating
   Supervising
   Communicating
   Leading
   Deciding
   Motivating
   Developing & Training staff

   } IMPLEMENTATION

7. Monitor and control in order to
   Measure resources & other
   Uses to see that desired outcome
   is reached

   } EVALUATION

Systems Approach to Management

Every service needs inputs men, materials and money motivation so that various processes of service can move to produce desired output and outcome.

System can be defined as a unit of functionally interrelated components designed to achieve a set of predetermined objectives.

Hospital is an open system, which is a part of a large system that is the health care system

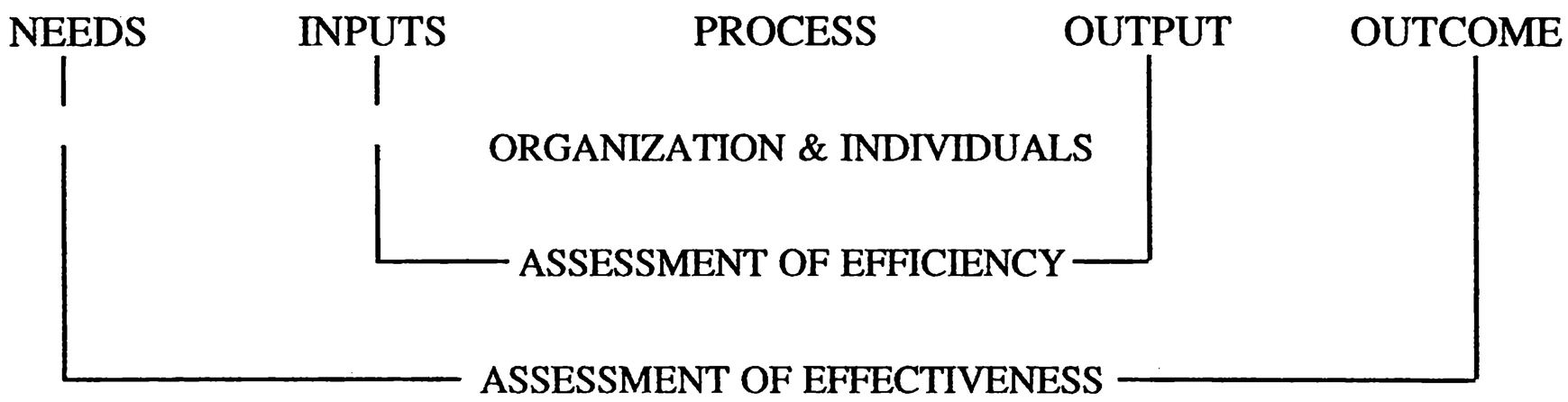
Hospital has also its sub systems.
Broadly they are

a) Medical & Nursing system.
b) Support services system
c) Utility Services system
d) General Administration system

- There are interactions between systems and between sub systems in a system.
- They have their own specification of objectives and targets.
- They have specific inputs and outputs.

MANAGEMENT MODEL

Environmental & Community Constraints



EFFICIENCY = $\frac{\text{OUTPUT}}{\text{INPUT}}$ is a measure of results obtained and the efforts expended.

EFFECTIVENESS = $\frac{\text{OUTCOME}}{\text{NEED}}$ is a measure of the degree to which the objectives has been achieved.

This model could be used to analyze either the system or a subsystem in the hospital and this is called systems approach to management.

APPLICATION OF THE ABOVE MODEL

Out patient Department of a Hospital.

NEED :- Illness and conditions among the community which warrant attention of medical care.

:- Hospital facilities - building
- Examination rooms etc,

- Staff - Doctors, Nurses, Pharmacists etc.
- Materials - drugs, dressing, registers etc.
- Money - for above activities and payment of salaries etc.

i.e. Men, materials and money **Resources**

PROCESS

- Planning : for O. P. D. Services
  - Estimating number of patients.
  - Requirement of staff, drug etc.
- Organizing : Places for examinations
  - Waiting halls
  - Dispensaries
  - Allocating job, responsibilities etc.
- Leading : Motivation of staff to come on time being courteous, prompt in attention to patients, supervising to provide quality care etc.
- Implementing : Ensure all activities are coordinated. Patients are seen in time. Drugs are provided and ensure that patients are correctly diagnosed and treated properly i. e. smooth functioning of the OPD.

Controlling and Evaluation

- To see that records and registers are maintained.
- Check whether adequate drugs are available.
- Whether staff is adequate and they function properly.
- Ensure that objectives / targets are achieved.

OUTPUT No of patients correctly diagnosed and treated at OPD.

OUTCOME Reduction in illness and condition warranting treatment at OPD

In conclusion it is evident that all hospitals managers must be well - versed in concepts and principles of management and should apply the same diligently for efficient and effective delivery of hospital services needed by the community.

CHAPTER 26

HOW TO ENSURE THE SMOOTH RUNNING OF THE INSTITUTION (SUPERVISION)

22.1 INTRODUCTION

This Chapter deals with :-

(i) The philosophy of supervision

(ii) Importance of planning supervision

(iii) How to supervise

(iv) How to ensure supervision at regular intervals

(v) How to ensure effectiveness of supervision.

The important areas which should be supervised are also given for guidance.

22.2 What is Supervision

The term supervision derives from two Latin words, super (over) and visum (to see). It means vision from above; that is somebody with authority is directing affairs from his position above.

Remember

(1) Supervision is a helping process.

(2) Good work should be praised.

(3) Deficiencies should be pointed out to the person being supervised and a chance given to improve, prior to taking punitive measures.

22.3 What are the main objectives of Supervision?

(i) To ensure the hospital is functioning satisfactorily, overall. For example; whether patients get courteous and prompt treatment; whether the office is functioning smoothly.

(ii) To ensure that critical patient care activities take place as they should. For example, whether mothers in labour are monitored as per national standards, whether stamped cases are seen within 15 minutes, whether all critical equipment in the Intensive Care Unit is working.

If the institution is not supervised, the public will be dissatisfied, and will complain to higher authorities. Newspapers will highlight deficiencies, there will be petitions and inquiries.

22.4 For supervision to be effective it must be planned.

Plan to supervise the following daily :-

(i) Cleanliness of - toilets, wards, drains & garden.
(Please see Section on sanitation).

A daily ward round will prevent a lot of problems

(2) Are essential drugs available?
(Please see Section on Drugs & Supplies)

(3) Are mothers in labour monitored properly?
(Please see Section on Labour Room Management).

(4) Are instruments sterilized properly and entries made in the sterilization chart?
(Please see Section on Sterilization procedures).

(5) Draw the red lines in all Attendance Registers. This would ensure punctuality by all categories of staff.

22.5 The following can be supervised periodically, for example, monthly :-

(i) Are Unit Conferences held regularly chaired by the Consultants.

(ii) Are Intern House officers attending to all cases admitted after the morning round before they go off for lunch.

(iii) Are all returns sent in time.

(iv) Check post operative patient records.

22.6 What are the methods of supervision?

(1) Observe

- Cleanliness
- Monitoring of FHS by FHW
- Flow of patients in the OPD.

(2) Check records

- Entries in sterilization charts.
- Records of monitoring of FHS & Pulse.
- Inpatient Diseases Register.
- Notification Register.

(3) Interview

- Mothers to find out whether urine was examined and blood pressure taken at time of admission
- Patients in the OPD to find out when they came in,

  When they were registered, and when they were seen by the Doctor and when the drugs were issued.
- Has the patient been told how and when to take drugs.

(4) Test Checks

- Drugs
- Whether the no. of items of drugs prescribed have been given at the OPD counter and in correct amounts.

22.7 Follow up

Follow up is to ensure that deficiencies discovered are corrected. For this purpose, it is essential to maintain notes of inspections, which need not be elaborate. Where ever necessary, the notes can be sent to the immediate supervisor, for help with a particular problem/s, at that level.

FOLLOW UP IS THE KEY TO EFFECTIVE SUPERVISION

22.8 Supervision is a team effort

The head of the institution cannot do all the supervision necessary by Him/Her self. The other managers such as the Consultants, Matron, AO, Overseer, Sisters in charge of wards etc. need to help in the process.

22.9 A few Don'ts

(i) Do not pull up staff in front of patients

(ii) Do not confront staff with patients due to a lapse of the former!

(iii) Do not hesitate to give praise where praise is due!

DO REGULAR SUPERVISION AND ENJOY SEEING THE INSTITUTION IMPROVE

CHAPTER 27

ADMINISTRATION AND ESTABLISHMENT FUNCTIONS (OFFICE MANAGEMENT)

23.1 INTRODUCTION

Office management is concerned with the performance of the functions of offices, by means of which it achieves its objectives.

23.2 OBJECTIVE

Ensuring the performance of the office functions efficiently is the objective of office management. Most of these functions belong to the clerical staff. These functions should be assigned to the clerical and other relevant staff. The performance of these functions must be regularly supervised by the Administrative Officer.

23.3 FUNCTIONS OF AN OFFICE

The five major functions of any office are :

1) Receiving information
2) Recording Information
3) Arranging Information
4) Giving Information
5) Safeguarding Assets

A well functioning office is an important asset of a Hospital.

23.4 CREATING AND MAINTAINING FILES

1. Case Registers are maintained in Form General 31. Code letters should be assigned to every clerk, according to availability of clerks.

Establishment Work	Administration Work	Financial Work
EA	MA	FA
EB	MB	FB

Each clerk should maintain a case register and all the cases opened should have code letters, serial number and the year during which the case is opened, on the right hand top corner of each case. (e.g. EA/1/93 - MA/1/93 - FA/1/93).

2. While cases will be maintained for different subjects, skeleton Personal Files have to be maintained for each member of the staff. There should be a separate case register for Personal Files with a separate page in the register for each category of staff. Each category of staff, should bear a separate code in addition to the code letters of the establishments division and the serial number of the entry in the case register.

e. g EA/MO/1 for Medical Officers
EA/NO/1 for Nursing Officers
EA/MA/1 for Male Attendants
EA/FA/1 for Female Attendants
EA/MW/1 for Midwives
EA/HCS/1 for Clerks

Personal Files for Medical officers will be maintained at the Ministry of Health and Skeleton Personal Files should be maintained at the Institutions. Personal Files transferred from other institutions should be registered in the case register under the next available serial number.

An Index in the following form should be maintained at the beginning of each Personal File.

Page Remarks

1) Letter of appointment

2) Letters accepting appointments

3) Date of assumption of duties

Form Health 372.

4) Medical Examination Report

Form General 169.

5) Agreement - Form General 160.

6) Birth Certificate

7) Declaration of Assets -

Form General 261

8) History Sheet

9) W. & O. P. Initial Declaration

10) W. & O. P. / P. S. P. F. Registered Number

11) Change affecting nature of Appointment

12) Leave out of the Island

13) Study Leave

14) No pay and Half pay leave

15) Punishments

16) Commendations

17) Civil status

18) Whether Educational Certificates have been verified.

19) Oath or Affirmation (form General 278)

20) Oath or affirmation

The above documents should be obtained and filed at least within one month of the appointment of an officer or employee. Action should be taken to confirm the officers or employees at the end of the probationary period or the period of acting.

3. An Index Register should be maintained by each clerk.

4. Circular files should be maintained in respect of each category of circulars and circular letters. Where Record Rooms are available such files should be maintained in the Record Room.

23.5 Dealing with daily tappal

Every communication received in the office should be date stamped. The Tappal should be opened in the presence of the Head of the Institution or in the presence of the Administrative Officer. Registered and Express letters should be indicated on top left hand corner. The subject clerk should take over letters after initialling the entry in the register. All incoming correspondence must be entered in the inward register. All Registered and Express letters to be sent, should be entered in the outward register and Express Letters/ Register.

23.6 MAINTENANCE OF REGISTERS

1. Case Register in form general 31
2. Cadre distribution registers
3. Register of Increments
4. Attendance register
5. Leave register
6. Short leave register
7. Index register
8. Register of employees reaching 55 years of age
9. Register of Inward "Registered" and "Express" letters
10. Register of outward "Registered" and Express letters.
11. Inward & Outward Requesters for other letters.

23.7 REPORTS AND RETURNS

1. Every institutions is expected to report certain events at periodic intervals to higher authorities. The information thus generated can be used to plan and monitor the activities of the institution or the area concerned.

   The following reports should be sent to the P/ D. H. S./ Dey. P. D. H. S. and the D. G. H. S. as the case may be.

2. **CHANGES OF STAFF DUE TO TRANSFERS APPOINTMENTS RETIREMENTS (MONTHLY)**

   1. Name of the officer
   2. Designation

3. Previous station

4. Date of reporting / leaving the station / retirement

(Form Health 372 should be used for this report and one copy should be sent to D. G. H. S. is respect of Medical Officers).

3. INCREMENTS TO BE PAID (Monthly)

1. Name of the Officer
2. Designation
3. Present salary
4. Increment
5. Salary to be paid

4. BILLS TO BE SETTLED FOOD, MILK, FIREWOOD, LAUNDRY (MONTHLY)

1. Institution received from / issued to
2. Name of the item and the quantity
3. Details of receipt orders
4. Details of issue orders

5. LOSS AND DAMAGE OF STORES ITEMS - FR 115 (MONTHLY)

1. Particulars of the item
2. Date of loss or damage
3. Present position of action taken thereto
4. Value
5. Write off order in terms of financial regulation

6. HOLIDAY WARRANTS (MONTHLY)

1. Number of the Warrant
2. Date of issue
3. Number of tickets
4. Name & designation of the person to whom the concession was granted.

CHAPTER 28

DISCIPLINARY PROCEDURES

1. INTRODUCTION

The staff representing the Department of Health comprising of many categories are attached to the Health Institutions throughout the Island. The management of these personnel by the senior or middle level management would require a good knowledge on the process of disciplinary proceedings, as laid down by the Secretary to the Ministry of Public Administration under the authority of the Cabinet of Ministers. This chapter gives a brief guideline on the major areas of these disciplinary proceedings. It is important to note that the inflictment of punishment is only one area disciplinary control. The prevention of indiscipline is another area, the failure of which is the cause of the need for disciplinary action. The management time spent by the demands of disciplinary control of personnel is increasing day by day that more attention should be given by the managers to the prevention of indiscipline. It will help to reach the objective of the Institution to provide good quality patient care and to ensure contentment among all concerned.

2. Objectives of disciplinary procedures

The observance of fair procedures should be the main characteristic of disciplinary proceedings. This is in accordance to the requirement that 'Justice must not

only be done, but that it must clearly appear to be done. Under the prevalence of fair procedures only, that, justice can best come out, while a climate of acceptance of decisions would also grow. The adoption of fair procedures meaningfully shall include the following :-

(ii) Observance of natural justice

(ii) Avoidance of delay

(iii) Observance of the rule of law

(iv) Presumption of innocence of accused till he is proved guilty

(v) Punishments in consistence with offences

The Principles of natural justice have two rules as established in the Courts of law.

(i)

Rule against Bias" No man to be judge in his own Cause"

a) Any one having pecuniary interest is debarred from hearing the case

b) Any one having a personal interest at the point of creating a real likelihood of bias is debarred from hearing the case.

(2)

Rule regarding the Right to a hearing. "Audi Alteram Partom"

(When there are two parties)

a) Each party should have the opportunity of knowing the case aginst him and of stating his own case.

b) Each party must have the chance to present his version of the facts and make his submissions on the relevant rules and regulations etc.

c) Each party must be able to comment on all the material considered by the judge.

d) Neither party must communicate with the judge behind the other's back.

3. Disciplinary Authorities

A. Public Service Commission (Colombo)

1. Members of the All Island Services
(e.g. Medical Officers, Dental Surgeons etc. Irrespective of the station they work)

2. All staff grade officers coming under the line Ministry

B. Provincial Public service Commission
All officers in the province other than the officers who belong to the All Island Service and the combined service.

C. Director General of Health Services (Colombo)
All non staff grade officers and minor staff coming under the line ministry.

D. Provincial Director of Health Services
Deputy Provincial Directors of Health Services
Non - Staff grade officers and minor employees under the delegation of powers from the Provincial Public Service Commission.

E. Directors Teaching Hospitals
Minor grade employees serving under them.

Note

P. A. circular No. 37/92 of 24.12.1992 on the 1993 Salary Revision defines a Staff Officer; Sub-ordinate officer; Minor employee as follows.

Staff Officer - An officer who, under 1993 new salaries, is entitled to a salary scale with an initial of Rs. 37,200 p. a. or above and whose annual increment is Rs. 780 or more.

Sub - ordinate officer - An officer who under 1993 new salaries, is entitled to a salary scale with an initial of Rs. 24,120 p. a. or above but who does not fall into the category of officers referred to above.

Minor Employee - An officer who under the 1993 new salaries, is entitled to an initial salary of Rs. 23, 160 p. a. or less.

PRELIMINARY INVESTIGATIONS INTO ALLEGED OFFENCES

When a complaint is received by the disciplinary authority or a head of institution, a preliminary investigation has to be done. It is necessary that this is done without much delay. The purpose of this investigation is to find out whether there is against an officer/employee and what offences appear to have been cor extent. Further the witnesses to the incident and documents necessary t have to be identified.

A preliminary investigation can be conducted by an officer authorised to do so by the head of the institution or the disciplinary authority. Regarding a preliminary investigation the following features may be noted.

a) Statements should be recorded in the first person and in the language most familiar to the witness. At the end of the recording of the statement the inquiry officer should ask the witness to read same and sign and date it below the words "Read over and understood". The inquiry officer should then countersign, date and give is name and designation. If the inquiry officer himself has to read and explain to the witness, his statement, the inquiry officer should state so, before putting his signature there.

b) At the stage of recording evidence there is no accused, there may only be suspects.

c) When statements are recorded it is not proper for the suspect or any other person on his behalf to be present. However when stocks in his charge are verified he has a right to be present so that he could accept the verified balances recorded at the investigation.

d) In case of an accident to a vehicle it is appropriate for the inquiry officer to visit the scene as early as possible and record statements from driver and the passengers of the departmental vehicle and also if any other vehicle is involved, from the driver and the passengers of the other vehicle and from any others who have witnessed the accident. In addition the road layout and all widths, the position of vehicles before and after impact with direction of travel of each vehicle. Street or road name and name of village or town, the extent of damage to the vehicle and approximate cost of repair that should be recovered should be recorded.

e) The examination of witnesses can be in any order and at any time or place. Notifying witnesses is not necessary. The inquiry officer should however contact the witnesses through the appropriate supervisory officers when they are in their work places. The inquiry officer can examine any officer and record statements. In case of a member of the public his consent to examine him is necessary. if a witness has gone out of the Island and it is not possible to record is evidence it is sufficient to obtain a written statement from him.

f) It is better to record the statement of the person suspected of an offence last. If he refuses to give evidence such refusal should be recorded. If he

wants the statements of any others prepared to give evidence in support of him their statements should be recorded.

g) If any documents are impounded the custodians should be given receipts with numbers and these numbers should be recorded in the statements.

h) After the suspect gives his evidence if it is necessary to recall any witness to check with any matters coming to light afresh he should be recalled.

i) More than one officer can conduct a preliminary Investigation. On completion of the investigation a report should be given whether or not a prima facie case exists and if so in respect of whom, what offence/s and to what extent.

Notes for the guidance of tribunals of Inquiry

1. At the beginning of each sitting of the inquiry the following particulars should be recorded.

i) Date & Time

ii) Place

iii) Names of officers present (Inquiry officer, Prosecuting Officer, Defending officer, Accused and Witness).

2. The witnesses should give evidence in the language most familiar to them. The evidence should be translated if the tribunal or the Defence is not familiar with it. It is not necessary to give evidence under oath.

3. All evidence should be recorded in a continuous narrative in direct speech. Questions and answer form should be used only in instances where it is necessary to do so to understand beyond doubt particular points in the evidence recorded.

4. The evidence given by him at the preliminary investigation should be asked to explain the contradiction.

i. His explanation should be recorded.

ii) If he remains silent, the fact should be recorded within square brackets.

5. If a witness does not answer a question, the question should be recorded with the observation (the witness does not answer) in square brackets.

6. The tribunal if it wished to record any other observations arising out of the evidence being recorded, it should be done within square brackets.

7. If the inquiry gets adjourned for a short break or if the behaviour of the witness is boisterous or should there be any such observations pertaining to the inquiry it should be recorded. It should be done within square brackets and at the time they arise and in the body of the record.

8. On completion of the evidence of the prosecuting witnesses the accused officer should be asked whether he is summoning any witness in his defence and his answer recorded. The evidence of defence witnesses if any, should then be recorded. After the defence has led it's evidence, if witnesses for the prosecution are re-examined or new witnesses are summoned after the defence has led its evidence, the defence will be permitted the same facility.

9. A witness after finishing his evidence should read over the statement. If he agrees with what is recorded he should endorse it as "read and accepted correct". If he denies having made any statement as recorded, such denial should be recorded within square brackets together with the comments of the tribunal. The witness has to sign with date the endorsement he made. The tribunal should also sign the statement if the evidence is recorded in any other language.

The Prosecuting Officer

In a formal inquiry the case for the Department may be presented by an officer who is not a material witness in the proceedings. This officer should be someone against whom the accused cannot put forward a valid objection, as bias. He has the power to amend a charge sheet only for technical reasons. He cannot bring in new charges or change the fundamental principles for the existing charges.

. He should help the Inquiry to conduct the inquiry But should not prejudice the mind of the Inquiry Officer at any time.

The Defending Officer

The accused officer may be allowed to be represented by an officer in the Public Service or by an officer retired from the Public service. It is an Offence for a serving officer to charge a fee for appearing for an accused officer. A serving or retired officer is entitled to duty warrants and travelling expenses.

Guidelines on

Interdiction from Duty & Placing on Compulsory Leave

No officer should be interdicted unless the Disciplinary authority is reasonably certain that a charge can be maintained against an officer. If disciplinary proceedings have been initiated or are about to be initiated on charges which if established are sufficiently serious to warrant his dismissal or if an officer is convicted by a court of law in any criminal proceedings, or is summarily convicted by a court under section 449 of the code of Criminal Procedure Act or is found guilty of any offence or is subject to any penalty by any statutory authority empowered by law to do so, or an offence of bribery is disclosed in the course of a preliminary investigation, where it is considered undesirable that an officer should continue to exercise the functions of his officer, he may immediately be interdicted from office by the disciplinary authority.

When an officer has been interdicted it is essential that the disciplinary proceedings against him should be completed with the least possible delay.

The Secretary has to order the total denial of emoluments to an officer on interdiction against whom there is a prima facie case of negligence, causing loss to Government misappropriation, fraud, forgery or similar misdemeanour committed in respect of public property and resulting in a loss to Government or of bribery or any other measure of illegal gain. The Secretary can authorise a payment not exceeding one half of the officer's emoluments if the disciplinary proceedings against such an officer are not completed within a period of three months. When the period of three months is determined any period of postponement of proceedings attributable to the accused will not be counted. Except on instances mentioned above normally half emoluments are paid and in special circumstances of an individual case the Secretary may order payment of more than one half proportion of the emoluments.

Under the law of Sri Lanka all persons are presumed to be innocent until proved guilty. In regard to an officer being charged in the law Courts with an offence against society but not against the public service of the Institution in which he is working the following procedures may be followed.

i) In the case of such offences, where the officer is taken into custody and remanded he should be placed on compulsory leave.

ii) If the officer is released on bail, and the disciplinary authority feels that the nature of the alleged offence is such that his reinstatement is not detrimental to the interests of the public service the officer should be reinstated.

iii) But if the disciplinary authority feels that reinstatement is detrimental to the public service the officer should be placed under interdiction till the determination of the court case.

Interdicting an officer without adequate evidence and his restoration if found not guilty means a loss to Government as he will be paid arrears of emoluments for work he did not do.

Keeping an officer under interdiction for a long time causes injustices and the break-down of the morale of the officer concerned. It is a loss to the Government as the post he was holding cannot be filled until the inquiry is over. Therefore it is necessary that the charge sheet should be served within one month of the date of interdiction and the inquiry should be completed within 3 months thereafter. If the inquiry officer has not submitted his report at the end of the 3 months the officer should be reinstated in his post and the inquiry proceeded with thereafter.

In the opinion of the disciplinary authority if the charges against a temporary employee warrant interdiction had he been holding a permanent post, he should be discontinued instead of placing him on interdiction. On completion of the inquiry he may be re-employed if the findings of the case justify his re-employment.

Vacation of Post

Any Government officer not reporting for duty without obtaining leave is deemed to have vacated his post, from the date of such absence. He has to be informed about it immediately by letter sent to him by registered post or personal delivery. This letter can be issued by the disciplinary authority or by a staff officer who is the Local Head of the Department. No Charges should be framed against him nor his explanation should be called for his being absent without taking leave.

If he submits an explanation on his own within a reasonable period of time (This reasonable period could be decided by the disciplinary authority) it has to be considered by the disciplinary authority who will decide whether to allow or disallow him to return to work. If his request to resume duties has been turned down and he tenders an appeal before the expiry of 3 months the matter has to be referred to the P. S. C.

PUNISHMENTS

A. Major Punishments

i) Dismissal

ii) Termination of Service (After disciplinary inquiry)

iii) Retirement for general Inefficiency

iv) Retirement for inefficiency as a merciful alternative to dismissal (only by the Cabinet of Ministers or the P. S. C)

v) Reduction in Seniority

vi) Reduction in rank

vii) Reduction of salary/Deferment of increment

viii) Deferment of promotion for a specified period

ix) Disqualification from sitting any promotional examination for a specified period.

x) Any other form of punishment of greater severity than those punishments described under minor punishments.

B. Minor Punishments

i) Reprimand (a warning is not a punishment)

ii) Severe Reprimand or censure

iii) Suspension of increment

iv) Stoppage of increment for a period not exceeding one year

v) A disciplinary transfer at the officer's expense

vi) A fine not exceeding one week's expense

vi) A fine not exceeding one week's pay

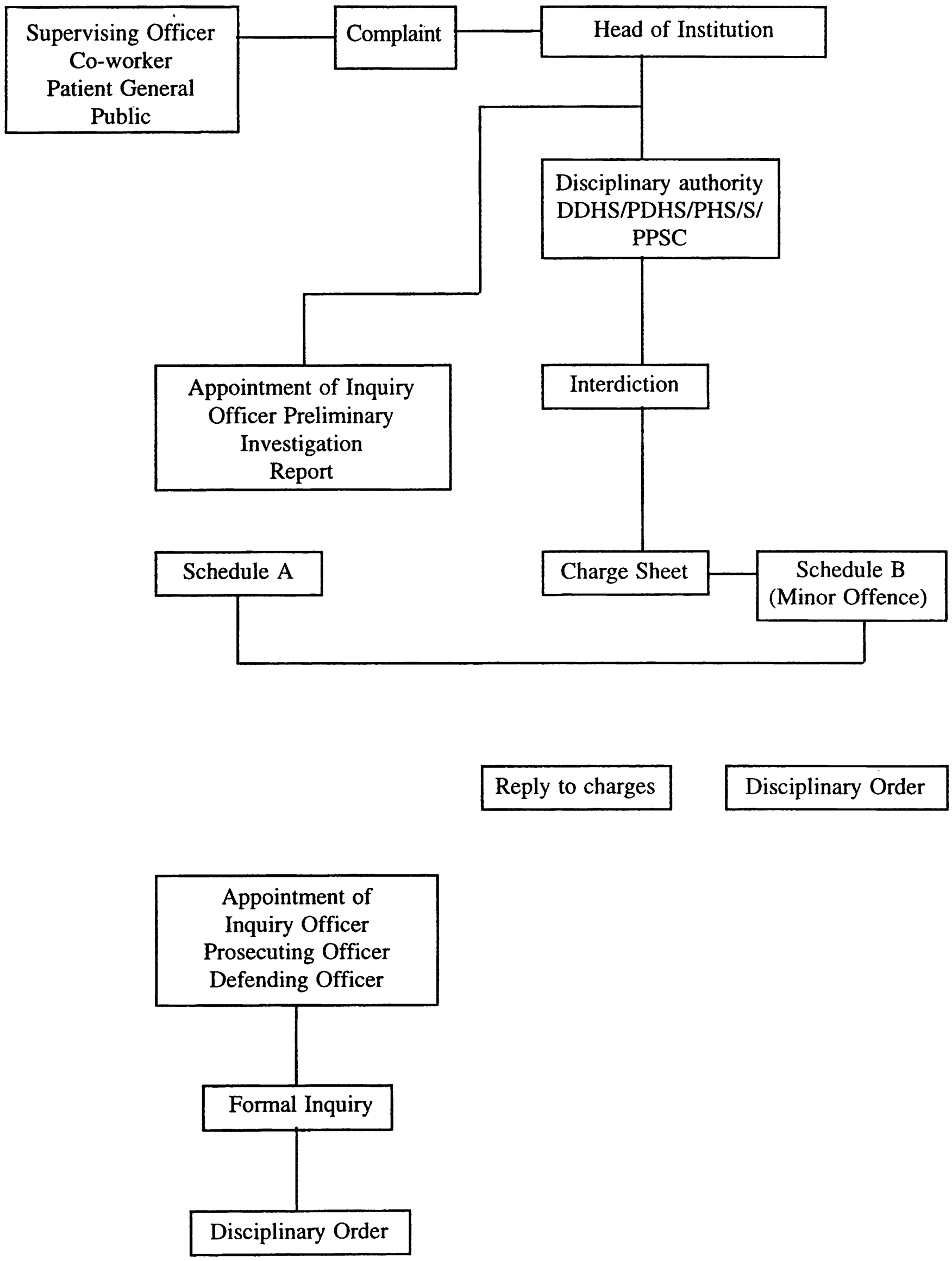
vii) Any other form of Departmentally recognised punishment not more severe than those listed above

7. Appeals

The Public Service Commission itself is the appellate Body over its decisions, and on the disciplinary orders made by other officers to whom the Public Service Commission has delegated its powers of punishments.

1) Any officer who gives a disciplinary order under the delegated authority from the Public Service Commission Cannot vary any order passed by themselves in disciplinary cases. When an appeal is made against a disciplinary order the papers should be submitted to the Public Service Commission.

DISCIPLINARY PROCEDURE



CHAPTER 29

FINANCIAL MANAGEMENT

Financial Regulations have been framed for the financial management of all departments in an orderly manner. Therefore, all State Officers who are involved in the management of financial resources should adhere to the financial regulations for the smooth functioning of respective institutions. The procedures laid down hereunder are subordinate to the financial regulations. The instructions appended are based on the instructions of departmental circulars, Treasury circulars, and Financial regulations.

The financial functions of Government Institutions Commence with the preparation of a plan and annual estimates for a particular financial year.

Teaching Hospitals and Specialised Hospitals and Campaigns come under the purview of the line Ministry and other Hospitals under the purview of the Provincial Councils.

02. Preparation of Estimates and Authority to make the Payments

Financial Management consists of two main aspects namely; estimate of expenditure and estimate of revenue. The procedures described hereunder are only in respect of estimate of expenditure. The estimate of expenditure is a forecast

of the cost of services that are intended to provide during the course of any particular financial year. Every Department / Ministry should furnish an estimate to the Treasury for the ensuing year in April of the previous year. It is the responsibility of the Chief Accounting Officer to present annual estimate for ensuing year to Treasury, during the first quarter of previous year. The Heads of Teaching Hospitals and Special Hospitals and Campaigns should furnish their draft estimate to the Chief Accounting Officer (Secretary) to enable him to consolidate and transmit same to the Budget Division of the Treasury. This Budget should be based on the annual plan prepared by the respective institutions.

The estimates are prepared annually under a Head of expenditure assigned to each Ministry/ Department. Expenditure is classified under a programme which is defined as functional units of appropriation. Programme comprises of group of projects. There are two types of projects under a programme namely. recurrent and capital projects. The projects are again sub divided into standard objects (class of cost component). There are three programmes under Ministry of Health & Social Services Head of expenditure.

1. General Administration
2. Patient Care Services
3. Community Health Services

Each programme is sub divided into projects and the projects consist of object code.

e.g. Head of expenditure 460	-	Ministry of Health & Social Services.
Programme 2	-	Patient Care Services
Project 1	-	General Hospital - Colombo
Object Code 1101	-	Salaries & Wages
1102	-	Overtime and Holiday pay.

The institutions under the administrative control of the Line Ministry forward their annual estimates to the Secretary of the Line Ministry who in turn transmits the same to the treasury after consolidation. Provincial Health Ministry obtains the budget from the respective decentralised units and frowards same directly to the Finance Commission who in turn makes its recommendation to the Treasury for allocation of funds.

Salaries are prepared for the approved cadre. In respect of other items a forecast is made on past data taking into consideration any variation in the future.

The Treasury allocates funds in consultation with the Ministry. This is presented debated and passed by Parliament as an appropriation Act

Immediately after the Appropriation Act is passed by Parliament Hon. Minister of Finance signs the warrant and the Treasury releases cash imprest to all Department and Ministries, including Health Ministry who are authorised to incur expenditure from the approved estimates. Any transaction in a Government Institution involves the following stages;

1) Authorisation
2) Approval
3) Certification
4) Payments

In order to carry out the above functions delegation of power has to be made vide FR 135. Responsibilities of Authorising Officer, Approving Officer, Certifying Officer and Paying Officer are set out in FR 136, 137 and 139 respectively.

03. Imprest

The imprest is a sum of money advanced by the Treasury to meet the departmental expenses. The imprest issued by the Treasury will not exceed approved budget of the Department / Ministry. The Institution shall refund the unexpended balance to the Ministry at the end of the year. The imprest will be released by the Treasury out of consolidated fund. The consolidated fund is a fund managed by the Treasury and the revenue collected from various sources credited to this fund.

The cash required to any medical institutions under Line Ministry should be obtained through their imprest application (Cash flow statement) to the Ministry of Health on or before 5th day of the month. Institutions under the Provincial Councils will get their cash imprest from the Treasury through the Chief secretary. As and when imprest applications are received by the Ministry of Health from all the institutions under the purview of the Ministry of Health, they are consolidated and one application is submitted to the Treasury. The cash require-

ment of Ministry of Health including sub offices (imprest) for a particular month will be released by the Treasury up to the imprest limit fixed by the Treasury. Immediately after obtaining the imprest the Ministry of Health will distribute the money among the institutions, according to their needs. It is the duty of the Heads of Institutions to exercise strict economy in incurring expenditure.

04. Petty Cash Imprest

The payments of an institution will be made out of imprest granted by the Line Ministry / Chief Secretary as the case may be. But there may be urgent petty expenses in an institution for which petty cash imprest is used. for this purpose a certain amount shall be set aside out of the main imprest. This is called petty cash imprest. The limits and the amounts of petty cash will be decided by the Chief Accounting Officer.

Petty Cash Imprest may be granted for petty expenses and it shall be issued for the following :

1. Cashiers at Teaching Hospitals, Provincial Hospitals, Special Hospitals and Base Hospitals for meeting urgent Local Purchase.
2. Postal Imprest
3. Imprest for Building Maintenance
4. Imprest for Hospital Charges
5. Imprest for Blood Donors
6. Imprest for fuel etc.

If any variation in the limit of Petty Cash Imprest or to introduce a new petty cash payment is necessary, the Heads of Institutions should obtain authority from the Chief Accounting officer.

05. Release of Cash Imprest

The Treasury releases the cash Imprest monthly to the Ministry of Health according to its requirements. The Ministry of Health will distribute part of the main Imprest to the Teaching Hospitals, Special Hospitals and Campaigns in accordance with their imprest applications made at the beginning of the month. When releasing cash imprest to a hospital the procedure adopted is to send a cheque to the bank account of the institution and an advice note to the respective institution. This is in respect of capital expenditure. The Treasury has made

arrangements with the Bank to advance cash in respect of recurrent expenditure and the actual expenditure will be reimbursed to the banks by the Treasury. In cases where the above facility has not been effected, The Cash Imprest is released to above institutions by cheques as before. The Imprest obtained monthly in this manner should be settled by the respective heads of institutions to the Ministry of Health by rendering summary of accounts. Any cash balance remaining at all institutions at the end of financial year should be refunded to the Ministry of Health & Social Services.

06. Register of Remittances

The remittances register should be maintained in Form Health 696 at all institutions for recording remittances received. The particulars of receipt should be entered on the receipt side of this register. When making payment entries should be made on the payment side. It is advisable to get the signature of the recipient, when a payment is made. This should be balanced daily. The Accountant / Heads of Institution should check the cash balance at the end of the day and certify the balance shown in the register.

07. Miscellaneous Cash Collection

Heads of Institutions are required to maintain a register for the miscellaneous type of cash collection. All Collection in respect of miscellaneous services such as private medical certificate, donation, sale of unserviceable item, garden produces, sale of family planning item etc. should be entered in this register.

As and when such type of money is collected a receipt on Form Gen 172 should be issued as proof of receipt of money. The collection should be deposited in the Bank as soon as possible by institutions after recording in the cash book. Institutions under the Provincial Councils send the money through a Money Order to Deputy provincial Director (former RDHS). Head of Institution or an officer nominated by him should ensure that this register is maintained properly. It is their duty to initial the entries made in this register at the end of the day.

08. Daily Cash balance Statement Register

A separate register shall be maintained in every institution in order to show the actual cash, lodged in the safe at the end of the day.

The cash balance shown in the remittance register, petty cash imprest register miscellaneous cash collection register should be posted to daily cash balance statement register before money is deposited in the safe.

09. Tender Boards

A divisional tender board is established with following members at Provincial Director's Office and the Institutions under the Ministry of Health, Highways and Social Services.

Director	-	Chairman
Accountant	-	Member
Administrative Officer.	-	Member

The Accountant shall serve as the Secretary of the tender board. The Tender Board limits will be notified by the Chief Accounting Officer, of the Line Ministry and the Secretary of Provincial Health Ministry.

10. Inventories, Stock Books etc.

Inventories and Stock Books are divided into two sections.

1) General Inventory (Stock Books) - Under the Accountant
2) Surgical Inventory (Stock Books) - Under the RMP or CP.

All items received should be entered in the relevant inventory book from the supporting documents and authenticated by a responsible officer. An inventory certificate should be placed in the voucher for payment giving references to the respective ledger folio and authority for payment. In addition to the main inventory books there should be sub inventory books at each section. Items received as donations should be entered in the donation register at first and then transferred to the main inventory and sub inventory. Distribution list should be maintained by the Officer in-charge of the stores.

11. Board of Survey and Condemning of Unserviceable Articles

Heads of Institutions of the Line Ministry shall arrange annual board of survey to check the physical stock at their Institutions. Any shortages should be looked into. A board of Survey will consist generally of 03 members where Chairman is a Staff Officer. For surgical items one of the members should be an officer

who is technically competent to examine such item. Whenever necessary assistance of the Director (Finance) stock verification of the Ministry could be obtained. Completed general 47 papers with recommendation of the board should be submitted to the Director (Finance) Stock verification for the write off authority. After receiving the write off authority respective items could be written off from the inventory. The Board of Survey shall classify the unserviceable items as:

1) Destruction
2) Repairs
3) Transfer to Govt. Factory, Steel Corporation
4) Saleable

The destruction of unserviceable items shall be done in the presence of a member of the Board of survey. The unserviceable items should be collected from all sections of the institution and stored in one place.

Hospitals/Institutions under the Provincial Council should send their completed General 47 papers to the RDHS and RDHS will appoint the board of survey to the respective hospital/institution. On the recommendation of the Board RDHS will grant the write off authority.

12. The Registers Maintained in an Institution

1) Cash Book (General 58)
2) Appropriation Vote Ledger (General 138A)
3) Deposit Ledger (General 69)
4) Cheque and Money Order Register (G. A. 83)
5) Counter Foil Register
6) Remittance Register
7) Miscellaneous Cash Collection Register
8) Daily Cash Balance Statement Register
9) Register of Losses

Above registers are maintained at the Institutions under the Line Ministry and the R. D. H. S. under the Provincial Council. Health Ministry.

CHAPTER 30

INDUCTION TRAINING AND IN SERVICE TRAINING

INTRODUCTION

In service training provides staff development in order to be competent in their job functions. It will provide opportunities for clinical update of our professional staff on the latest medical technology, knowledge and skills related to their area of specialties. It also will improve the management skills of our staff in supervisory positions and develop higher managerial responsibilities.

In the modern world a professional should update his knowledge and skills in keeping with the rapid progress made specially in the medical and nursing fields. Training should be organised to make systematic education possible. Every province and every large hospital (Teaching, Provincial & Base) must have its own training centre ideally with full time staff doing only training. The training centre should be headed by a competent and committed Nursing Officer of a level of a Matron or Sister or Senior Nurse, so that she should organise a monthly or weekly training programme, monitor what happens and keep statistics of what has happened. She should have at least one assistant so that the training centre should be functional continuously. They should undertake training of all categories of health staff. They have to organise the training course. It would be good if they can come in as trainers when the Train the Trainers Programmes are conducted centrally by the Ministry. Ideally these training Co-ordinators should in turn be specially trained to become trainers.

Philosophy of inservice training

Inservice Training and developing staff is the key to the Hospitals excellence, with a reputation for personalized, courteous and helpful service.

Inservice Training on staff development is viewed as a shared responsibility between the individual staff member and the hospital.

Officers responsible for Training

Those directly in charge of the staff at work are responsible for ensuring that their staff are adequately and completely trained not only to do the work for which they are employed but also to meet future organizational needs.

Role of Hospital Manager, Medical/Nursing or Paramedical or Auxiliary

The Hospital Managers have a vital role to play in the training and development of the staff in his / her department. This implies that he has to:

a) Identify training needs of his staff now and in the near future.

b) Maintain adequate updated training plan and training records of his own staff.

c) Decisions about staff training activities must be made carefully with the use of available resources.

Inservice Training will generally guide you by:

a) Improvement of patient care services of a higher level.

b) Expansion - to provide additional knowledge and skills that staff can use in their existing jobs to increase their effectiveness and contribution.

c) Development - to impart skills that do not apply to the staff's existing job, but will prepare him for higher responsibilities.

Role of the individual

The staff should be interested in his own training and development. He should also be interested in wanting to perform better in updating his knowledge and improving his skills.

Role of Inservice Trainer

1) Providing orientation programmes and introductory training for the new employees.

2) Reviewing training needs with the units, Surgeon or Physician etc.., and developing programmes to meet the training needs of the Unit.

3) Implementing the hospital's training and development plan for the staff.

4) Monitoring the effectiveness of training programmes.

5) Administering the hospital's continuing educational schemes.

6) Maintaining training records of staff.

7) Updating the Training and Inservice Development Manual.

8) Monitoring the implementation of Action Plan by staff.

Training and Development Plan

a) During the annual appraisal exercise, hospital managers will review the training and development needs of each of their staff for the next 12 months, taking into consideration staff performance levels, aspirations etc.

b) The training and development plan for each staff category in the respective hospitals should be mapped out from the completed appraisal forms. Training requirements of each hospital must be documented by hospital needs.

c) Training should not be confined to attending courses only. In identifying training requirements, the following will have to be considered.

Any on - the - job training programme to help staff perform better in his specific job should be identified and undertaken.

Any ad - hoc external courses / seminars that will provide specific skills or knowledge to a staff member is also recommended.

It is important that hospital managers consider carefully the benefits and cost effectiveness of these programmes before any staff members are identified for training. A budget should be submitted to the Ministry of Health during the preceding year and funds obtained before commencing the programme.

d) A committee with Director, M. S., D. M; O. Medical Officer, Nursing Officer, Clerk, Overseer, Midwife, representative of other categories should be set up and learning need assessment of each category of staff must be done.

Training Centre

It should have all necessary office equipment including a class room or lecture hall to train about 25 persons, audio visual equipment, personal computers, overhead projectors, video etc. The library should also be under the control of the training Co-ordinator.

Financial Support

Money has to be obtained from the Treasury and given to the different large hospitals and Provinces to organise training. The finance should be monitored at the Provincial Level and Centrally. Reg. Establishment letter 7/93/205/5 of 9/2/87.

Curriculum to be developed for the Inservice Training Programme. Nursing Management, Operation Theatre Techniques for Nursing Officers, Intensive Care Nursing, Surgical & Medical Nursing Care, Paediatric Nursing, Orthopaedic Nursing and Clinical Care Nursing are some of the topics for which curriculum has to be made. It may be for 3 months or one month or two weeks or one week. Curriculum as in Appendix (I), (II) and (III).

Examination

Should there be an examination at the end of a course, whether two weeks one month or more?

Certificates of Attendance

Certificates of Attendance are presented to participants who have attended at least 75% of the entire programme.

Evaluation

All trainers shall be required to complete a course evaluation questionnaire immediately after a program has been completed. Such evaluation will provide the Trainers with feedback on course usefulness and instruction effectiveness.

Action Plans

All trainees have to submit an action plan to implement in their respective hospitals after they return from the training program. This is monitored by the Trainers three months after the course. Hence, majority of trainers have taken great pains and interest to implement these action plans and the performance has improved considerably.

EXAMPLES

A. Induction Training for Medical officer

Duration - 1 week

Content -
(1) Management of Patient Care Services
(2) Inter - Personal relationship
(3) Ethics
(4) Disciplinary Procédure
(5) Financial Management
(6) Infection Control

B. Induction Training for Nurses

As in Appendix I, II, III, IV

C. Clerical Staff

Duration 3 days

Content
(1) Establishment procedure
(2) Special regulation
(3) Hospital Administration

D. Family Health Worker

Duration 5 days

Content
(1) Maternity & Child Care
(2) Orientation to team work in Hospital
(3) Primary Health Care
(4) Infection Control

E. For Auxiliary Worker / Labourer

Duration 5 days

Content
(1) What is a Hospital Organization
(2) Inter-personal relationship
(3) Ethics
(4) Responsibilities
(5) Demonstration
(6) Prevention of Cross Infection

APPENDIX I

TRAINING PROGRAM - INTENSIVE CARE
SURGICAL INTENSIVE CARE UNIT

AIM : To guide and facilitate Nursing Officers' Learning and Development of Advanced Nursing Competence.

COURSE OBJECTIVES :

The Course prepared Nursing Officers to:

1. Increase their understanding of physical, biological, science relevant to their major areas or study.
2. Increase their nursing skills to enable them to function more effectively in their area of specialization.
3. Change their attitudes in patient care management
4. Hold responsibility in total nursing care.
5. Develop skills in handling ultra-modern equipment in high tech-nursing.

COURSE OF STUDY :

1. The course of study for the advanced Nursing Course extends over two months.

2. a) THEORY

Lectures two hours per day

five days for the week - 20 hours

b) PRACTICAL

Surgical Intensive Care Unit	-	04 weeks
Medical Intensive Care Unit	-	01 week
Dialysis Unit	-	01 Week
Coronary Care nit	-	01 Week
Accident Service I C U	-	01 Week

3. The Post Evaluation Test will be held at end of the course.

4. Regular attendance is essential for the practical experience.

CLINICAL EXPERIENCE

Clinical experience will be extended over a period of 2 months of the course with emphasis on the integration of theoretical principles with clinical practice.

Trainees will be given the opportunity to nurse patient with diverse range of dysfunctions in critical care areas. They will be assigned to individual patients, and will be encouraged to provide individualized care rather than nursing specific diseases. To support learning, students will be introduced to more complex patient problems as the course progresses.

An attachment will also be arranged for the students to work in the Accident Service to enhance their skills in dealing with major trauma, and emergency crisis intervention; as those nurses who are working in Provincial Hospitals have to take care of such patients in their ICU.

Type of Nursing Officers:

Nursing Officer Grade I and Grade II of all the Provincial Hospitals and Intensive Care unit of General Hospital Colombo.

ANNEX II

COURSE TITLE : CARDIO - THORACIC NURSING CERTIFICATE

OBJECTIVES : On completion of the course the nurse will be able to: Provide and maintain a high standard of nursing care for patients in Cardio - Thoracic Units.

Assist in the education of student nurses working in Cardio - Thoracic Units.

Form a group of Registered Nurses with the expertise required to staff Cardio - Thoracic Units

COURSE OUTLINE :

1. Anatomy
2. Thoracic Medicine
3. Cardiology
4. Cardio - Thoracic Medical Nursing
5. Cardio - Thoracic Surgery
6. Cardio - Thoracic Surgical Nursing
7. Hospital Management
8. Medico - Legal Aspects
9. Microbiology
10. Nutrition
11. Occupational Therapy
12. Pharmacology
13. Physics
14. Physiology
15. Physiotherapy
16. Principles of Education
17. Radiology
18. Radiotherapy
19. Renal
20. Resuscitation
21. Sociology and Psychology
22. Tuberculosis
24. Tuberculosis Nursing
24. Field Trip

COURSE TITLE : OPERATING THEATRE NURSING COURSE

OBJECTIVES : On completion of the course the nurse will be able to :

- Explain the principles of planning and operating theatre
- Apply the principles of operating theatre Nursing Practice
- Plan, organise and implement Operating Theatre Nursing activities
- Teach, supervise and evaluate personnel under her charge.
- Initiate and participate in in-service nursing education programs for staff development
- Promote and maintain harmonious inter - personal relationship
- Assist the surgeon and the anaesthetist
- Provide care to patients in the pre and postoperative wards

COURSE OUTLINE : Clinical Areas

Postings

- Cardio - Thoracic
- Ear, Nose and throat surgery
- General Surgery
- Neurosurgery
- Ophthalmic Surgery
- Orthopaedic Surgery

Elective Posting

- Genito-Urinary Surgery
- Obstetric & Gynaecology Surgery
- Oral-Dental Surgery
- Paediatric Surgery
- Plastic Surgery

Other Departments

Compulsory Posting

- Anaesthetic Department
- Central Sterile Supply Department
- Theatre Sterile Supply Unit
- Pre and Post Operative Wards

Subjects

1. Administration and Supervision
2. Medico - Legal Aspects in Operating Theatre Nursing
3. Operating Theatre Nursing Procedures
4. Anaesthesia
5. Emergency Situations
6. Microbiology and Principles of Aspects
7. Various Disciplines of Surgery
8. Pre - and Post - operative Patient Management

COURSE TITLE : PAEDIATRIC NURSING

OBJECTIVES : On completion of the course the nurse will be able to:

: identify the current role of the Paediatric and Neonatal Nurse.

: Utilise her knowledge of normal growth and development of children in her delivery of care.

: Counsel and guide the family in child care with emphasis on promotion of health status

Detect illness and / or deviations from the normal in children and neonates and initiate appropriate action promptly

: Provide skilled and effective care to sick children and neonates

: Give competent care to acutely ill children and neonates requiring intensive nursing

Apply the problem solving approach in the delivery of care to children and neonates

Identify agencies promoting child care in the community and direct the family to those agencies when necessary

Conduct health teaching to the family and the community in the care of normal children and neonates, as well as those requiring follow-up care.

COURSE OUTLINE : **1. Introduction to paediatric and neonatal nursing**

: Growth of Paediatrics Internationally

: Trends in Paediatric and Neonatal Nursing

: The Nurse's Role in Paediatric and Neonatal Nursing

2. NORMAL CHILD

: Infancy and Childhood

: Adolescence

: Nutrition

3. NEONATAL NURSING

: Normal Newborn

: Neonatal conditions and Nursing

: Implications

4. PAEDIATRIC NURSING

: Paediatric Conditions and Nursing Implications

: Psychiatric Aspects and Nursing Implications

: The Disabled Child

5. HEALTH EDUCATION ON CHILD CARE

: Parenting

: Nutrition

: Immunization Programs

: Prevention of Accidents

: Rehabilitation on Discharge

Appendix III

CLINICAL ELECTIVE : CRITICAL CARE NURSING

PART I CORE STUDIES FOR CRITICAL CARE ELECTIVE

UNIT COURSE CONTENT

CCN I BIOLOGICAL SCIENCE

1. Homeostasis and Adaptation
2. Altered Body Structures and Functions and Effects on the individual

CCN II BEHAVIOURAL SCIENCE

1. Human needs : The Basis for nursing
2. Emotional Response to Illness / Acute Crises
3. Counselling and Care

CCN III ADVANCED CLINICAL NURSING :
CRITICAL CARE

1. General Principles
2. Common Therapeutic Intervention related to critical care

CCN IV SPECIFIC CLINICAL DISORDERS / PROBLEMS AND MANAGEMENT
(RELATED TO THE ADULT AND NEONATE / CHILD)

Specific clinical disorders / Problems related to critical care will be reviewed:

1. Problems of Prematurity
2. Endocrinological problems
3. Cardiovascular problems
4. Respiratory problems
5. Neurological problems
6. Renal problems
7. Gastro - Intestinal Problems
8. Haemological Disorders / Problems

PART II ADVANCED NURSING STUDIES

UNIT COURSE CONTENT

AN I NURSING PROCESS

1. The Base of Professional Nursing Practice
2. Documentation of Patient Care

AN II **NURSING RESEARCH**

1. Principles of Research
2. Methodology

AN III **PROFESSIONAL NURSING PERSPECTIVES**

1. Principles of Research
2. Methodology

AN III **PROFESSIONAL NURSING PERSPECTIVES**

1. Ethical Issues and Law
2. Contemporary Issues in Nursing and Health Care

AN IV **BASIC MANAGEMENT CONCEPTS AND ISSUES**

1. Management Model
2. Motivation
3. Supervision / Teaching
4. Performance Appraisal
5. Financial Management
6. Quality Assurance

CLINICAL EXPERIENCE

Clinical practice will extend over the duration of the course with emphasis on the integration of theoretical principles with clinical practice.

Students will be given the opportunity to nurse patient with diverse range of dysfunctions in critical care areas. They will be assigned to individual patients, and will be encouraged to provide individualized care rather than nursing specific diseases. To support learning, students will be introduced to more complex patient problems as the course progresses.

An attachment will also be arranged for the students to work in the Emergency Department to enhance their skills in dealing with major traumas, and emergency crisis intervention.

COURSE TITLE : PSYCHIATRIC NURSING

OBJECTIVES : On completion of the course the nurse will be able to :

: Participate actively as a member of the psychiatric team in the care and management of patients with mental health problems and disorders.

Carry out treatment as prescribed by the psychiatrists and monitor patients' Progress.

Organise and implement milieu therapy programs.

Organise and implement rehabilitation programs to meet with individual patients needs and to develop their optimum potentialities.

COURSE OUTLINE : Clinical Areas

: Admission and short - stay wards

Psychiatric Outpatient Departments

Long - stay Psychiatric Wards

: Psychogeriatric Wards

Rehabilitation Unit

Unit for the Mentally retarded

Child Psychiatric Ward

Subjects

1. Clinical Psychology
2. Psychiatry
   (psychopathology, physical and psychological treatments, and legal aspects)
3. Psychiatric Nursing and Ward Management

MINISTRY OF HEALTH OF SRI LANKA
GENERAL NURSING CURRICULUM

PHILOSOPHY

· Nursing is a dynamic, therapeutic and educative process in meeting the health needs of the individual, family and society and at the same time nursing facilitates individuals and communities to take care of their own health.

Professional nursing is a service provided for the promotion of personal and social well - being. Nursing aims to attain this goal by utilising scientific knowledge, technical and interpersonal skills and appropriate attitudes, in caring for the sick and in the promotion of health.

The relationship between patient and nurse is the essence of nursing care in which trust, caring, empathy and compassion are communicated through planned and skilled care irrespective of the context in which it is practised.

The nursing profession in Sri Lanka believes that health is a basic human right. Nurses assist people of any race. religion, creed, sex or socio-economic states, to reach their potential throughout the life span in physical, social, psychological, emotional and spiritual health.

In the three year general nursing curriculum the health-illness continuum is under-stood within an environment which is continually changing. Nurses aim to meet the health needs of people in the promotion and restoration of health, the prevention of disease and in rehabilitation.

In the roles of health care promoter, health care giver and health care facilitator, nurses have responsibilities to respect the unique characteristics, human rights and basic human needs of individuals, families and communities.

The learner in nursing is a person who, through well planned learning experiences, is motivated and educated to become an effective professional.

Learning is a life - long activity. Nursing education fosters in the learner the desire and commitment to continue to learn. The nursing profession requires learners who are self - motivated, and self - disciplined and who can use critical thinking, problem - solving and decision - making appropriately in giving skilled care.

COURSE OBJECTIVES

The overall objective of the course is to prepare nurses who will be able to utilise a comprehensive range of knowledge, skills and attitudes in caring for patients, families and communities, across the age span and in a variety of settings to prevent disease, promote and restore health and assist in rehabilitation.

At the completion of the course the nurse will, therefore, be able to :

1. Identify the health needs of individuals, families and communities;
2. Plan, organize, coordinate and evaluate nursing care using available and affordable resources;
3. Plan implement and evaluate nursing measures aimed to prevent disease and its complications;
4. Establish positive and effective interpersonal relationships within the working environment;
5. Respond with sensitivity to the needs and problems of patients and co - workers;
6. Participate in teaching health to individuals, families and communities;
7. Demonstrate skills of caring in the restoration to health and the rehabilitation of patients;
8. Demonstrate leadership in the management of care of individuals and communities;
9. Practise effective communication with patients, families, co-workers and health care personnel;
10. Respect ethical codes of nursing and act responsibly to protect human rights and individual dignity of patients, students, co-workers and other health team members.

PROFILE OF THE REGISTERED NURSE

At the completion of the general nursing course the nurse will function in the roles of

Health Care promoter, Health Care Giver and Health Care Facilitator

As a Health Care Promoter, the nurse will:

1. be committed to health teaching and health promotion;
2. be sensitive to the health patterns of various cultural groups in the country;
3. be skilled in working with groups in the community to assist them in making health decisions;

4. recognize the components of primary health care and the levels of prevention;
5. be a leader in the promotion of health as a nurse and as a citizen;
6. be competent in identifying health problems and in appropriate referral if necessary;
7. be skilled in counselling patients, relatives and community groups.

As a Health Care Giver, the nurse will:

1. be committed to maintaining standards of nursing practice and in providing quality nursing care;
2. be safe in the practice of clinical nursing skills;
3. have a pleasant manner towards patients, relatives and co-workers which conveys confidence, consideration and cooperation.
4. be skilled in determining the physical, emotional, spiritual and social needs of patients and in responding appropriately;
5. be competent in observation and in the collection and recording of information during day to day care;
6. be skilled in planning, implementing and evaluating care in a variety of health care settings;
7. be reliable and responsible in own professional standards and ethical conduct;
8. be flexible during periods of change and adaptable to new situations and circumstances;
9. be responsible and accountable for own actions and participate in the evaluation of nursing practice;
10. be skilled in communication which fosters interpersonal relationship with patients, co-workers and other health team members;
11. contribute to the teaching of student nurses and other health team members as appropriate;
12. contribute to the assessment of students' clinical skills as appropriate.

As a Health Care Facilitator, the nurse will:

1. be competent in organizing health care resources for the care of patients and community groups;
2. be skilled in the collection and recording of data to be used in the care of patients and / or for research;

3. participate with other team members in health care research studies;
4. be skilled in identifying problems in clinical practice which need to be investigated or researched;
5. be competent in problem solving in the care of patients and in the organization of health care delivery;
6. foster interpersonal communication to facilitate the transmission of information to patients, relatives and other health team members;
7. anticipate opportunities for establishing liaison between hospital, community and patient's home;
8. be committed to continuing learning to enable evaluation, renewal and refreshment of personal approaches to work - related responsibilities;
9. participate in monitoring nursing care practices.

MODEL OF THE CURRICULUM

CONCEPTUAL FRAMEWORK OF THE COURSE

CONCEPTS:

Care of patients, clients, families, communities

Health care promoter, health care giver, health care facilitator

Environment of Nursing Practice

DESCRIPTION OF THE CONCEPTUAL FRAMEWORK

Patients, clients, families and communities are at the centre of the nursing curriculum; the course is designed to meet the health needs of people and communities in the prevention of disease, the promotion and restoration of health, and in rehabilitation.

In achieving these aims the nurse acts in the roles of health care promoter, health care giver and health care facilitator.

Nursing is practised within the wider environment of the health care system, the National Health Policy, primary health care, and the social, psychological, cultural and spiritual environment of the country.

These concepts are shown in the model of the curriculum.

CHAPTER 31

SUPPLIES MANAGEMENT INCLUDING DRUGS

1. INTRODUCTION

Pharmaceuticals play a crucial role in preventive and curative health care. Drugs are a vital and expensive component in the provision of Health Services. A fair proportion of the health budget is invested in Pharmaceuticals. To ensure maximum benefit from such investment, it is essential that the drug requirements should be based on realistic estimates. Rational prescribing and efficient drug management with a sense of cost and quality consciousness would contribute Sri Lanka to achieve the goal of "Health for All by the Year 2000 A. D." using the primary health care approach.

2. OBJECTIVES

a. To make the prescriber cost conscious

b. To promote rational prescribing

c. To enlighten on the importance of proper indenting of drugs so as to ensure adequate supplies of safe and effective drugs be available in the institutions throughout the year, within the given allocation.

d. To maintain proper storage

e. Methodical stock control

f. To prevent pilferage

g. To completely stop the condemning of drugs due to expiry, spoilage etc.

3. IMPORTANCE OF AVAILABILITY OF SUPPLIES

It is quite evident that for the smooth functioning of any Medical Institution the availability of drugs of good quality is essential. Non availability of a commonly used essential drug in an institution would give rise to:

a. Public criticism of the institution.

b. Patients losing confidence in the institution.

c. Requests for prescriptions to purchase drugs from pharmacies.

d. Inability to treat the patients effectively.

e. Possibility of filing legal action against the management.

As such, it would be the responsibility of the Head of the Institution to see that adequate supplies of essential and life saving drugs are available at all times in the institution.

4. PREPARATION OF ANNUAL ESTIMATE

This is a vital activity in the Management of Drugs

1. Over estimation .....>. Excess Stocks → wastage / pilferage

2. Under estimation .....> Shortages

3. Responsibility of :-
   1. Head of the Institution - Institution
   2. Deputy P. D. H. S. - Region
   3. P. D. H. S. - Province
   4. D/Teaching Hospitals. - T. HH.

4. Number of methodologies are available.

5. Based on morbidity pattern, Standard treatment regime } Estimates would be realistic.

6. Simple method would be as follows.

   A. Prepare a statement showing the quantity consumed of each drug, monthly for the previous 12 months.

B. Taking the average consumption, calculate the annual requirement.

C. If there is a balance of any of the drugs which could be used for the following year, that amount should be deducted from the total annual requirement.

D. Calculate the cost for each item of drug using the price list issued by D/M. S. D.

E. Add the cost of all items of drugs required to obtain the total cost of the drugs.

F. Ensure that the total cost of drugs estimated, does not exceed the financial allocation granted.

G. To obtain this ABC analysis method should be used. ABC Analysis categorises the items into three main categories, namely A. B, & C.

A - Category items are those items which consume 80% of the money allocated for purchase.

B - Category costs 10-15% of the money and,

C - Category the balance.

5. MONITORING OF SUPPLIES

This could be efficiently done by establishing Institutional Drug Review Committees in all Secondary and Tertiary Care Institutions.

A. The recommended membership is :

i. Director / Medical Superintendent / District Medical Officer / Divisional Health Officer (Chairman)

ii. Chief Pharmacist of the Institution (Secretary)

iii. All Consultants (if so staffed)

iv. Matron or Senior Nursing Officer

v. Senior Medical Officer (out - patient department)

B. These Committees should meet monthly. Minutes should be sent to D - M. T. S/ D-MSD / PDHS / Deputy PDHS.

C. Functions are :

i. Monitoring of supply and use of drugs in the institution;

ii. Ensure economy in the use of drugs;

iii. Ensure adequate supply of critical / essential drugs in the institution and;

iv. Any other functions assigned to it by the Deputy Provincial Director of Health Services / Medical Officer in - charge.

6. MANAGEMENT OF STORES

a) Drugs should be kept dry, cool and away from light.

b) Tablets should be kept in air-tight tins and screw - top jars or in the original containers.

c) It should be ensured that there is no roof leakages, and the drug store is free of rodents & insects.

d) The room should be clean, white - washed walls, well ventilated, well lit, and with a fire extinguisher.

e) Drugs should be stacked at least 10 c. m. from floor level and 35 c. m. from any wall (to prevent attack by white ants)

f) Storage of drugs should be done in a manner that it would facilitate :-

1. The issue of drugs on the closest expiry date first and;
2. The issue of drugs according to dates of manufacture, if their expiry dates are not indicated;
3. The issue of drugs on the first - in, first - out basis.

g) Display prominently the list of drugs with expiry dates.

h) Dangerous drugs and Narcotic Drugs should be kept in a locked cupboard so that these would not be accessible to unauthorized persons.

i) Expensive drugs should always be kept under lock and key.

j) In addition to the drugs register, use of Bin Cards indicating the stock re-order level, re-order quantity etc. Should be used.

k) Expired drugs, substandard drugs, drugs without labels on the containers and drugs which had been withdrawn should be stored separately from the other and condemning should be done as early as possible.

1) Periodic Test Checks should be done as indicated in the Manual of Management of Drugs.

* **For guidelines for proper storage, please ref. Chapter 9 page 39 of manual on Management of Drugs.**

7. ISSUES TO SUB - STORES (INDOOR/OUTDOOR/WARDS ETC.)

A. Pharmacist should ensure that the entries are correct and books have been balanced correctly.

B. Stock availability at Sub - stores should be checked periodically (at least once a month)

C. Only a week's supplies should be issued to a unit to avoid pilferage and wastage due to the availability of excess stocks.

D. Request for issues of drugs should be authorized by the officer - in - charge of the institution.

8. STOCK CONTROL

Objective of Stock Control is to ensure that a minimum quantity of a particular item of the specified quality and specifications is available in stock to meet the estimated demand.

1. Stock position of any drug depend on - - - - - - > * Receipts
   * Issues
   * Maintenance of a buffer stock.

2. Following information isessential to have an effective stock control system:
   A. Quantity in stock
   B. Estimated demand for a specified period
   C. Quantity on order
   D. Lead time
   E. Obsolescence (expired / spoilt drugs)

3. Quarterly Return

		Based on the Quarterly return
A.	S. R. Number	Provincial Inst. OIC, D/MSD, DDS
B.	Name of Drug	
C.	Annual Estimate	
D.	Receipts up to Date	Inst. Under Central Ministry
E.	Balance in stock	
F.	Qty. required for next quarter	Based on the Quarterly return.

4. On receipt of drugs the following should be checked and entered in the drug registers on the same day.

A. Quantity received

B. Expiry date

C. Condition of the containers

D. Temperature to be stored.

Any discrepancy should be brought to the notice of the Head of the Inst .....>
DPDHS .....> D/MT&S ..... D/MSD.

5. Before issuing to Sub - stores (Indoor/Outdoor Dispensary) Pharmacist issuing should check the registers for:

A. The correctness of the entries

B. balancing of drug books.

Stocks available at the Sub - stores should be checked periodically (at least once a month)

6. Only a week's supply of drugs should be issued to each unit.

Excess stocks < Pilferage / Wastage

7. The pharmacists issuing drugs to the respective units (Wards, O. T. etc.) in the institution ensure that:

1. the requests received from the respective units for the issue of drugs are in order, reasonable and the books are balanced properly;
2. The balanced stock of drugs in the respective units conforms to guidelines issued on minimum stocks to be kept;
3. the balances stated in the request books are correct;
4. the issue of drugs has been authorized by officer in - charge of the institution.

9. ESTIMATION OF VACCINES :

a) Vaccines should be indented on a monthly basis from the Divisional Drug Stores

b) Indenting should be done on a monthly stock return Form.

c) Maintenance of the cold chain should be strictly adhered to.

d) Polio vaccine should be kept in the freezer compartment O° C.

e) Rest of the vaccines should be kept in the main chamber, including the diluents for Measles and BCG vaccines (4 - 8. C.)

f) Vaccines (as well as drugs) should never be stored in the door of the refrigerator.

g) Temperature chart of the refrigerator should be maintained and checked twice a day.

h) E. P. I. Manual should be referred to for further guidance.

10. MONITORING OF ADVERSE DRUG REACTIONS

1. Adverse drug reactions could occur due to :

a) Deficiencies in the manufacturing processes

b) Poor storage conditions

c) Spoilage during transportation.

2. All adverse drug reactions should be notified and monitored by the D. M. O../ M. O/M. O. I. C.

3. Drug reactions should be complained to D/M. T. & S and D/N. D. Q. A. L. with the following information.

a) Name of the drug

b) Name and address of manufacturer

c) Batch No. (if any)

d) Lot No. (if any)

e) Expiry date (if any)

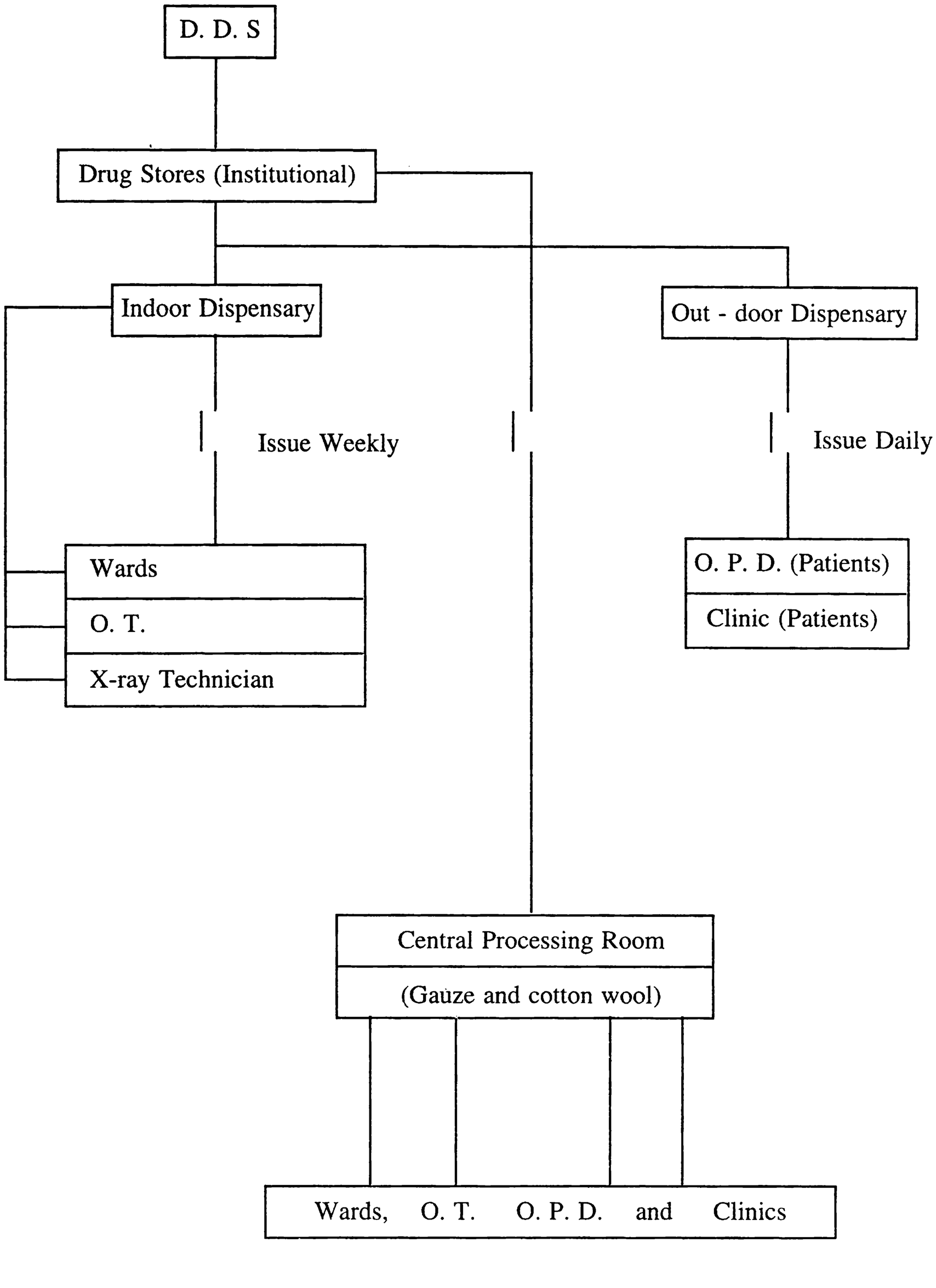
f) Date of manufacture

g) Nature of problem

4. It would be appreciated if samples could be delivered with the complaints, so that immediate action could be initiated by D/NDQAL.

5. Instructions received on the quality should be conveyed to all the staff members.

FIGURE - 1


D. D. S
Drug Stores (Institutional)
Indoor Dispensary
Out - door Dispensary
Issue Weekly
Issue Daily
Wards
O. T.
X-ray Technician
O. P. D. (Patients)
Clinic (Patients)
Central Processing Room
(Gauze and cotton wool)
Wards, O. T. O. P. D. and Clinics

10. TEST CHECKS

Test checks of drugs should be done as often as possible at Main stores, Indoor Dispensary and O. P. D. Dispensary.

It is preferable if the test checks are done on ad - hoc basis so that the Officers involved would not expect that the test checks would be performed. Physical balance of one or two drugs should be compared with the existing stocks. The officer conducting the test check should make it a point to endorse the results in the particular Drug Register. Explanation should be called and disciplinary action should be taken if there is a shortage or an excess of any item.

Action should be initiated to collect drugs issued to O. P. D. patients from the OPD Dispensary to be compared with the prescriptions that had been prescribed and whether the patients had been given clear information on taking the drugs.

11. DISPOSAL EXPIRED / SPOILT DRUGS

Drugs have to be disposed due to :

A. Expiry of the drug
B. Spoilage due to bad storage

It will be the responsibility of the Head of the Institution to see that above two factors would not affect the drugs in his Institution. If the drugs have expired or spoilt, a Board of Survey consisting of three (03) members, headed by a Medical Officer is recommended for disposal. Other members of the Board may be Divisional / Chief Pharmacist, Accountant or A. O. The Board of Survey will examine every item to verify whether the drugs have been spoilt due to negligence and if so, would inform the officer concerned and to surcharge him. Disposal could be done by incinerating or burial.

12. DISPOSAL OF EMPTY CONTAINERS

Empty containers could be collected and periodical auctioning could be done at the institutional level or to be transferred to D. D. S. to be auctioned.

13. LOCAL PURCHASE

Allocation for local purchases would be as follows :

* Drugs should be locally purchased for individual patients. On requests made by Consultants for critical drugs, after verifying that the drug is not available in the institution or the D. D. S., head of the Institution may approve the purchase.

* All local purchases should be done as far as possible with generic names.

* All local purchases should be entered in a special register and information regarding the local purchases made by each Consultant should be sent to all Consultants monthly for comparison.

CHAPTER 32

MEDICAL BOARDS

INTRODUCTION

Medical Boards are held in Secondary and Tertiary Care Institutions to examine patients with serious illnesses / injuries and make a recommendation regarding leave, fitness for further employment etc. Medical Boards perform an important service function at this level of institutions, for the whole public service.

Objectives

Medical Boards are held for the purpose of :-

a) Recommending medical leave beyond 3 months.

b) To determine whether an officer is fit to function in the capacity in which he is placed.

c) When Specialists' opinion has to be obtained regarding a medical problem that has been discovered in pre - employment medical examination.

d) For the purpose of determining the degree of disability after injury.

e) For Employees Provident fund purposes to determine whether a person is fit for further employment. This is for the purpose of refund of EPF contribution if the person is not fit for further employment.

Authority for request of Medical Boards.

i. In the case of Public Servants it is usually the Head of the Department or an officer delegated by him who makes the request for Medical Boards.

ii. In the case of Government Hospitals, the Directors of Teaching Hospitals, Medical Superintendents of Provincial Hospitals and special hospitals under central Ministry of Health shall submit the request to DGHS.

iii. In the case of Hospitals under Provincial Council administration, the request should be sent to the provincial Director of Health Services.

iv. In the case of private sector institutions, usually the Personnel Manager or the Managing Director or an equivalent Executive Officer will make the request to the Provincial Director of Health Services or Director General of Health services.

The request for a medical board should be in form General 142

v. In the case of EPF medical boards, the request comes from the Commissioner of Labour in a different printed form.

Medical certificates have to be submitted along with the requests to determine the composition of the Medical Board. However, requests may be made to determine suitability of continued employment, where no medical certificates have been submitted. In these cases, the nature of the illness should be given in as much detail as possible by the officer requesting the Medical Board. Where a Consultant of a particular specialty is not available in a Provincial Hospital, the Provincial Director will refer the request for necessary action to the Director General of Health Services.

Appointment of Medical Boards

Medical Boards are appointed by the Deputy Director General (Medical Services) at the Central Ministry level and by the Provincial Director / Deputy Provincial Director at the Provincial Level. All requests for Medical Boards should be dealt with expeditiously. The Medical Board consist of three members :-

i) The Director / M. S. D. M. O. of the Secondary or Tertiary Care Hospital.

ii) One consultant of the specialty which is relevant to the case. For example, if it is a medical case, a Consultant Physician.

iii) Another Consultant who is from a different specialty. For example, in case the first consultant is from a Medical Specialty, a Surgeon is appointed and vice versa.

In the case of an institution with more than one Consultant in each specialty the consultants should be appointed strictly in rotation. For this purpose, a register must be maintained and a tally kept as to the number of times each Consultant is appointed.

In the case of patients with Tuberculosis, the Director Respiratory Disease Control Programme is the Chairman of the Medical Board is for a patient who is resident around Colombo. In the other cases, the Hospital Director/ MS / DMO will be the Chairman of the Board. The other members will be the Divisional Tuberculosis Control Officer and a Physician. In the case of Medical Boards held at the Respiratory Diseases Control Programme, a Consultant in Respiratory Medicine is appointed.

Institutional Medical Board Register

Institutions should maintain a register of Medical Boards in the order in which the requests are received. Medical Boards should be appointed on a first come, first served basis. Usually, one convenient day is fixed in a week for medical Boards and the Consultants involved noticed well in advance. The patient also should be noticed to appear before the Medical Board on the date appointed well in time by registered post. Heads of Institutions are kindly requested to ensure that the first come, first served basis is followed to avoid complaints of favoritism.

Confidentiality

The composition of the board should not be divulged to the candidate, up to the time of examination.

Procedure at the board

At the Medical Board, one of the members will fill up the relevant form legibly, in necessary detail. The recommendation will cover one or more of the following depending on the case :-

i. Suitability for further employment

ii. Period of leave recommended

iii. Whether the candidate should appear before medical board again, if so, after what period of time.

NB : The medical Board can direct the patient to appear before another Consultant for a report from him for consideration by the Board.

All recommendations of Medical Boards must be sent to the authority appointing the Medical Board for approval of the decision of the Board, after which the papers are sent back to the officer requesting the Medical Board.

Determination of loss of earning capacity of public servants

Requests for determination of loss of earning capacity of public servants who have sustained injuries in the performance of their duties as set out in Public Administration circular 22/93 of 21.09.1993, should be referred to Medical Boards. The loss of earning capacity should be classified on the following lines :-

a) Permanent and complete disability - which means that the official will be unable to perform his current duties.

b) Permanent partial disability would mean the reduction of his capacity to function in his current capacity.

c) Temporary loss of earning capacity. This is when the injury has reduced earning capacity of the official only on a temporary basis. The percentage is calculated on the same lines as the loss of permanent earning capacity.

Annexure one to the above Circular sets out in detail the loss of earning capacity in terms of a percentage consequent to various types of injuries to different organs, senses etc.

It should however be noted that the calculation is based on the condition of the patient at the time of injury and not at the time of the Medical Examination.

d) The Medical Boards if necessary will also make a recommendation regarding the leave to be given to the officer.

e) The Medical Board is expected to report on any permanent disfigurement of the officer in addition to above.

It should be noted that the request for this type of Medical Boards should come from the Head of the Department to which the Officer is attached. The decision of the Medical Board should also in turn be conveyed to the head of the Department.

A separate form will be used for reporting on the degree of disability.

CHAPTER 33

OFFICIAL QUARTERS FOR OFFICERS AND EMPLOYEES IN THE DEPARTMENT OF HEALTH

1. Hospitals occupy a very important place in the services of the Department of Health. Since hospital services are mainly based on the admission and discharge of patients, it is essential that the staff serve institutions day and night for patient care services. In order to meet this end, they are expected to reside within the institutions and as such they should be provided with official quarters. Since all categories of staff cannot be provided with official quarters, it is the normal practice that official quarters are provided depending on the exigencies of the services.

Attention should be paid to Chapter XIX of the Establishment Code in the implementation of this policy.

2. Allocation of official quarters

Allocation of official quarters should be done in accordance with the number of quarters available, depending on the requirements of the institutions. If there are more officers in the institution applying for quarters over and above the number of quarters available, action should be taken to register them in the waiting list.

Although official quarters have been allocated according to grades, an official quarter which falls vacant can be assigned to a person of another grade depending on the requirement of the institution. However, it should be brought to the notice of the Head of Institution, Head of Decentralised Unit or Director General of Health services and approval obtained.

3. Waiting list of official quarters

Following particulars should be included in this list.

i. Name of the applicant:

ii. Designation:

iii. Specialised Unit attached to :

iv. Date of appointment to the institution.

v. Permanent residential address :

vi. Distance to the institution from the address :

vii. Whether the officer / spouse / minor child owns a house and the distance to the institution from that house :

viii. Number of Children.

Since Teaching Hospitals occupy a special place among other institutions in the Department of Health they have a large number of official quarters. These quarters may be suitably allocated by a Housing Committee appointed for that purpose. The Head of Institution or an officer, nominated by him should be the Secretary. The other members should be from the Government Medical Officers Association and Government Specialist Medical Officers Association. Since a large number of employees serve in Teaching Hospitals the allocation of quarters should be in accordance with the decision of the Committees. These officers should submit applications for quarters, on the form of application given in para 3 of this letter. These applications should be registered in the waiting list and marks for these applications may be assigned as follows:-

i. 01 mark for every month from the date of registration in the waiting list.

ii. Distance from the place of permanent residence :

01 to 07 miles 01 mark
08 to 15 miles 02 marks
15 miles and over 03 marks

iii. 01 mark per child (marks should be given only upto 06 children)

Decision of the housing committee should be the final decision for allocation of quarters. However any problem that may arise on this matter should be referred to the Ministry and its decision obtained.

4. Rent

Rent for the official quarters should be recovered in terms of para 5. Chapter XIX vol. (1) of the Establishments Code. The resident of a permanent quarters should pay the electricity and water bills.

5. Handing over and taking over of official quarters

Handing over and takir ; cver of official quarters should be done by the house wardens wherever avai] e and by officers in-charge of the subject where house wardens are not avaiiable.

In the handing over of official quarters the inventory pertaining to the equipment and other fittings of the house should be properly checked and any problem that may arise on this matter should be referred to the Head of the Institution forthwith. Special attention be paid to this matter on the instances of retirement or transfer of an officer. In this connection attention should be paid to sub section 8. Chapter XIX of the Establishments Code.

In the allocation of quarters for Medical Officers, furniture for common quarters of intern Medical Officers should be furnished free of cha:ge, while such Medical Officers would be exempted from rent. The same facilities will apply to the Quarters of Nursing Officers as well. However, they should refrain from using high capacity electrical items such as electrical cookers, refrigerators etc.

6. Maintenance of official quarters

Special attention should be paid for the maintenance of official quarters. In institutions where wardens have been appointed to control official quarters, they should be in charge of maintenance of quarters and custody of inventories and other goods of the quarters. They should also take action to keep quarters in good order. In institutions where wardens have not been appointed for this purpose, the residents of the quarters should refer relevant matters forthwith to the Head of Institution.

Priority should be given to the following maintenance work

1. Maintenance of water pipes.
2. The electricity supply, to be checked by the Electricity Board or by the relevant institutions.
3. Up-date the fittings and equipment at proper intervals.
4. Maintain cleanliness of inner and outer environment of quarters.

5. Protection of inventory items, equipment and fittings of official quarters.

6. Taking necessary remedial action by referring above matters and other problems that may arise from time to time to the Head of Institution.

7. **Control of Nurses official Quarters**

Wardens will be in charge of following matters in the control of quarters.

i. Custody of Inventory Register

ii. Supervision of the work of minor employees attached to the quarters

iii. Cleanliness of quarters

iv. Prevention of unauthorised outsiders entering quarters.

v. Providing necessary help when residents of quarters fall ill or in similar difficult situation.

vi. Activities relating to the issuing, cooking and distribution of meals of the residents of quarters. If there is a food committee, preparation of bills, recovery of money and providing any other assistance required.

vii. Delivery of private tappal received at the official quarters.

viii. Providing necessary assistance to visitors who attend on schedule time to meet residents.

ix. Any other duties that may be assigned by Head of Institution or the DGHS from time to time.

8. **Designating of Quarters**

It is desirable to have the official quarters designated. Such designation would facilitate the allocation to be less controversial. Quarters could be designated by recourse to the Blue print / type plans etc. Of such quarters.

9. **List of Occupants**

Chief occupant of every official quarters should provide the head of the institution with a list of occupants of his quarters and change notified as and when they occur. Subject Clerk will maintain these records distinctly.

10. **Garden Produce**

Garden produce available within the premises of official quarters could be enjoyed by the allottee of such quarters after payment of an annual / bi-annual rental to be assessed by the A. G. A. of the area.

UTILITY SERVICES

CHAPTER 34

DIET SERVICE

1. INTRODUCTION

1.1 Every non paying indoor patient in a Government Hospital gets a diet free of charge.

Hospital minor employees too are entitled for a diet.

As such the categories of diets are as follows:

1. Patients' diet
2. Employees' diet

The Medical Officer has to determine the patient's diet as it is regarded as part of treatment. It is the responsibility of the head of institutions to pay special attention in ordering, accounting, controlling and economising of diets.

1.2 **A diet** - A patient's diet for a Day is the entire requirement of food for a period of 24 hours starting from 12 noon on a particular day to 12 noon on the following day.

1.3 **Source of Diet Supply** - Tender procedure should be strictly adhered in selecting suppliers of raw provisions to medical institutions. Supplier can be a private contractor or a multi purpose cooperative society.

2. OBJECTIVES OF PROVIDING DIETS

2.1 To give a relevant diet depending on the illness. (Eg. Diabetic Diet, High Protein Diet).

2.2 To give a hygienically cooked balanced meal.

2.3 To serve patients with their meals at a fixed time avoiding the disturbances to the other patient care activities in the ward.

2.4 To facilitate the poor patients especially from the distant areas.

2.5 As a precautionary measure of preventing unhygienic foods coming into hospital.

2.6 To restrict unauthorized visitors coming to wards under the pretext of bringing food to their patients.

2.7 As a concession to the employees.

2.8 To ascertain that the patient's diets are not pilfered.

2.9 Confining the employees to hospital premises.

2.10 As an incentive to the employees

3. DIFFERENT TYPES OF DIETS

3.1 The following are the types of diets ordered in medical institutions.

a) Normal full diet

b) Normal half diet

c) No-diet (with or without extras)

d) T. B., Mental, Leprosy, Cancer and long term disabled patients in rehabilitation hospital's special diet

e) Paediatric diet

f) Paying Patient's diet

g) Employees' diet

A clarification of the Various types of diets is given below:

3.2 Full Diet

Thòse patients who are fit to take normal diets according to medical opinion are given a normal full diet. Depending on the main component factor the full diet is further calssiied as follows:

	Abbreviation
Vegetable diet	V
Egg diet	E
Fresh Fish Diet	FF
Beef Diet	B
Dry Fish Diet	DF

These diets should be ordered according to the under - mentioned weekly programme of diets.

Vegetable Diet - 3 days in the week

Egg / Beef / Fresh Fish /

Dry fish diets - 4 day of the week

Ordering Egg / Beef / DF / FF diets will depend on its cost - the lower cost diet being ordered more often. For diet scales see 5:1, 5:4 & 5:5.

3.3 Normal Half Diet

Patients who are not fit to take a full diet according to medical opinion are given a half diet. At times when a medical officer feels that a patient should get a high protein diet than a normal full diet he may order a half - diet with an additional item or more as extras. This should be done purely in the interest of the patient and should be reviewed as the condition of the patient changes.

3.4 No - diet

Those patients who are not fit to take a normal full diet or a half diet according to medical opinion should be given one or more items of extras such as milk, sugar, coffee, lime or rusk. This should be done purely depending on the condition of each patient, and the patient is supposed to be on 'no - diet' on such occasion.

ii) When a patient is not taking hospital diet due to any other reason even, such patients should be marked as on 'no - diet'.

3.5 T. B., Mental, Leprosy, Cancer and Long term disabled patents' of rehabilitation hospital Special Diet.

Those patients who are treated in T. B. Hospitals, Mental Hospitals, Leprosy Hospitals, Cancer Hospitals and Rehabilitation Hospitals are given a normal full diet specified above but they be given 270 grams of rice a day as against 200 grams of rice given to other patients. In addition, T. B. patients will get an extra

egg daily. Balaya, Kelawalla, Hurulla fish should not be ordered for T. B. patients.

For diet scales see 5:6 to 5:7.

3.6 Paediatric Diet

Children below 12 years of age should be provided with a Paediatric diet wherever possible. The pediatric diet is categorised under the following groups:

Scale 1 - 06 to 12 years

Scale 2 - 02 to 06 years

Scale 3 - 09 months to 02 years

Scale 4 - Below 09 months

Scale 5 - No - diets

For diet scales see 5:3 & 5:5.

3.7 Paying Patients' Diet

Paying patients are given a special diet depending on the class of the paying ward. The Heads of institutions where there are paying wards are allowed to use their discretion in deciding the necessary diet scales without exceeding the following limits of expenditure.

Class of Ward	Limit of Expenditure
Merchants Ward in G. H. Colombo	Rs. 150.00 a day
Class 1 wards	Rs. 150.00 a day
Class 2 Wards	Rs. 100.00 a day
Class 1 Villa wards in M. H. Angoda	
Class 2 Villa wards in M. H. Angoda	
Accommodation Wards.	Normal non - paying patients

3.8 Employees' Diet

1. Minor Employees attached to hospitals other than cooks are provided with a half - diet to be consumed within the hospital premises. They are entitled to take a lunch or a dinner with morning tea or afternoon tea which ever is applicable to their duty shifts.

An amount fixed by the department has to be recovered monthly from the employees who receive hospital diet.

ii) The weekly programme of employees' diets is as follows:

Vegetable diet	-	3 days a week
Beef Diet	-	1 day a week
Fresh Fish Diet	-	1 day a week
Egg diet	-	1 day a week

For diet scales see 5:2, 5:4, & 5:5.

4. Forms Used

4.1 Health 957 - **Diet slip** to be filled by each and every ward giving their daily requirement of Diet and extras.

4.2 Health 31 - **Table of Diets** - (Diet Sheet) to be maintained in respect of each indoor patient as well as each minor employee dieted. A separate diet sheet should be opened up for each ward and unit for patients and a separate diet sheet for the minor employees.

4.3 Health 31 A - **Monthly analysis of diet.**
Column 5 - 14 of this form should be utilised for this purpose and should also be followed daily.

4.4 Health 32 - **Table of Extras / Contingencies**

Items of extras ordered on B. H. T. should be recorded in the relevant columns.

4.5 Health 32 A - **Summary of extras.** The extras sheet (H. 32) should also be totalled at the end of every day and the daily totals posted under the appropriate columns in a summary of extras (form Health 32 A).

The above mentioned documents should be authenticated by the Head of the Institution / Administrative Officer or by an authorised officer.

4.6 Health 730/730A/15 **Diet order Book**

The requirement of raw provisions for diets and extras should be worked out based on the total number of diets strictly in accordance with the diet scales and finally to be ordered in this book. Should obtain carbon copy in the counterfoil. Original to be issued to the supplier before 11.30 a. m.

4.7 Health 202 **Milk Order**

Officers preparing the Diet order should prepare a milk order as well, on Health 202 and issue to the supplier.

4.8 Health 893 - **Milk Register**

In addition to the milk order a milk Register should be maintained on Form Health 893 where the daily order quantity taken over, and the initials of the officers concerned are indicated. The quantity of milk required for morning and afternoon tea, and extras at 10.00 a. m. and 4.00 p. m. should be separately indicated.

4.9 Health 894 **Register of surprise Inspection**

Findings of the Surprise inspection to be recorded in this book.

4.10 Health 945 **Shortage Register**

All items supplied short or rejected, should be recorded in this book. Replacements too to be recorded here.

4.11 Medical 290 When a contractor defaults he should be served with a complaint sheet on this form.

CALCULATION OF DIFFERENT KINDS OF DIETS

DIET SCALES (IN METRIC QUANTITIES)

5.1 (Metric)

		Frest Fish	Beef	Dry Fish	Eggs	Veget. leaves	Veget. fruits	Pulses	Milk	Bread	Rice	Tea	Sugar	Limes	Coco-nuts	Coco-nut oil	Green chil-lies	Salt	Curry Stuffs	Ripe Plant-ains	Fire-wood
					X				#					X	X	+			#		Kg
Pati-ents Full Diet	FF	60	-	-	-	120	180	@	112	120	200	05	15	1/4	1/5	7	2	8	1	1	1
	B	-	60	-	-	120	180	@	112	120	200	05	15	1/4	1/5	7	2	8	1	1	1
	DF	-	-	45	-	120	180	@	112	120	200	05	15	1/4	1/5	7	2	8	1	1	1
	E	-	-	-	1	120	180	@	112	120	200	05	15	1/4	154	7	2	8	1	1	1
	V	-	-	-	-	120	180	@	224	120	200	05	15	1/4	1/5	7	2	8	1	1	1
Empl-oyees Half Diet	FF	90	-	-	-	45	60	30	45	120	130	2 1/2	8	1/8	1/10	3 1/2	1	4	1 1/2	2	1/2
	B	-	90	-	-	45	60	30	45	120	130	2 1/2	8	1/8	1/10	3 1/2	1	4	1 1/2	2	1/2
	DF	-	-	60	-	45	60	30	45	120	130	2 1/2	8	1/8	1/10	3 1/2	1	4	1 1/2	2	1/2
	E	-	-	-	1	45	60	30	45	120	130	2 1/2	8	1/8	1/10	3 1/2	1	4	1 1/2	2	1/2
	V	-	-	-	-	45	60	45	45	120	130	2 1/2	8	1/8	1/10	3 1/2	1	4	1 1/2	2	1/2

All items other than those marked X are in grammes
Items marked with x are in nos.
Items marked with # is in portions 5:5
Items marked with + is in milli litrers.

@ 30 gms of local dhal on 3 days for a week
(On the days vegetable diet is served to employees

SCALE OF DIETS

CALCULATION OF DIFFFERENT KINDS OF DIETS

5.2 (in ounces)

	Frest Fish	Beef	Dry Fish	Eggs	Veget. leaves	Veget. fruits	Pulses	Milk	Bread	Rice	Tea	Sugar	Limes	Coco-nuts	Coco-nut oil	Green chil-lies	Salt	Ripe Plant-ains	Curry Stuffs portions	Fire-wood
	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	oz	No	No	oz	No	oz	No	oz	lbs
Non paying Patients	2	-	-	-	4	6	X	4	4	7	1/6	1/2	1/4	1/5	1/4	2	1/4	1	1	2 1/2
	-	2	-	-	4	6	X	4	4	7	1/6	1/2	1/4	1/5	1/4	2	1/4	1	1	2 1/2
	-	-	1 1/2	-	4	6	X	4	4	7	1/6	1/2	1/4	1/5	1/4	2	1/4	1	1	2 1/2
	-	-	-	1	4	6	X	4	4	7	1/6	1/2	1/4	1/5	1/4	2	1/4	1	1	2 1/2
	-	-	-	-	4	6	X	8	4	7	1/6	1/2	1/4	1/5	1/4	2	1/4	1	1	2 1/2

One ounce of local dhal per day should be given on three days a week (on the days vegetable diet is served to employees)

The above quantities are for the whole day (12 Noon - 12 Noon) on the folllowing day) FF. B. DF. & Eggs sre supplies with the lunch & the dinner is purely vegetable

In case of T. B. Mental, Leprosy, Cancer and disable patients the quantiiy of rice should be 9 ozs. per day.

T. B. patients get an extra egg on all days.

The quantity of salt may be increased to 1/2 ozs. per day when necessary.

5.3 DIET SCALES - PAEDIATRIC DIET

Description of Diet	ozs	Scale 1 6-12 years	Scale 2 2-5 years	Scale 3 9/12-2 years months	Scale 4 below 9	Scale 5 No diet
Rice	oz	6 (180 gms)	4 (120) gms	3 (90 gms)		
Bread Rusks	oz	4 (120 gms)	2 (60 gms)	2 (60 gms)	4 (120 gms)	-
Milk	oz	12 (336 ml)	12 (336 ml)	20 (560 ml)	40 (1120 ml)	
Eggs	No	1	1	1/2	1/2	-
Beef/ Fresh Fish	oz	1 1/2 (45gm)	1 (30gm)	1 (30 gms)	-	-
Dry Fish	oz	1 (30 gm)	1/2 (15 gm)	1/2 (15 gms)	-	-
Limes	No	1/8	1/8	1/8	-	-
Pulses	Nooz	1 (30 gms)	1 (30 gms)	1/2 grs 15	-	W
Veg. leaves	oz	1 1/2 (45 gms)	1 (30 gms)	1 (30 gms)	-	1
Veg. Starch	oz	1 1/2 (45 gms)	1 (30 gms)	1 (30 gms)	-	T
Veg Fruits	oz	1 1/2 (45 gms)	1 (30 gms)	1 (30 gms)	-	H
Tea	oz	1/12 (2 1/2")	1/12 gms	1/12 (2 1/2")	-	
Sugar		2 (60")	1 (30 gms)	1 (30 gms)	2 (60 gms)	E
Ripe (Plantains or fruits)	No	2	2	1	-	X T
Salt						R
Coconut	oz	1/4 (8")	1/2 (8")	1/2 (8")	-	A
Coconut oil	No	1/6	1/6	1/6	-	S
Margarine / Butter	oz	1/4 (7")	1/4 (7")		-	-
Green chilies	oz	1/2 (15")	1/4 (7")	1/4 (7")	-	
Curry stuff	No	1	1	1	-	
Portion#		1/4	1/4	1/4	-	

5:4 Ingredients required to prepare Pol Sambol for 100 Persons

Coconut of 30 ozs.	No. 10	
* Dry chillies	ozs.3	(90 grams)
Pepper seeds	ozs 2	(60 grams)
** Red Onions	ozs.	(90 grams)
Limes	No. 8	
Kitchen salt	ozs. 4	(120 grams)

* If necessary green chilies may be substituted for the whole quantity or part thereof.

** Leaks 06 ozs may be utilised as substitute

5.5 Curry stuff

	No. of grammes per portion
Red Onions	8.0
Dry Chilies	4.0
Garlic	2.0
Karapinche	0.4
Rampe	0.4
Tamarind	2.0
Corriander	2.0
Ginger	0.2
Cummin Seed	2.0
Pepper	0.4
Turmeric	0.8
Goraka	1.5

5.6 DIET TABLE FOR SPECIAL DIETS TO T. B., LEPROSY, CANCER & MENTAL PATIENTS, ALONG WITH LONG TERM DISABLED PATIENTS OF REHABILITATION HOSPITALS

Day	Breakfast	Lunch	Dinner
Sunday	Green grams Lunu Meris Coconut	Rice Fresh fish Fruit vegetables Nivithi Vegetable leaves (curry)	Rice Carrot Kankun Mellum
Monday	Bread & Jam	Yellow Rice Potatoes Salmon Curry Seeni Sambol	Rice Beans Vegetable Leaves (mellum)
Tuesday	Kiribath with Lunu Miris	Rice Fruit Vegetables Dhal curry Dry Fish (Fried)	Bread Kiri Hodi or Tomatoes Hodi
Wednesday	Green Grams with Lunu Miris	Rice Fresh Fish Fruit vegetables Vegetable Mellum leaves	Rice Fruit Vegetables Salad Cucumber or Tomatoes
Thursday	Bread with Dhal Curry	Yellow rice Chicken Curry Potatoes curry	Rice Fruit Vegetables leaves (Mellum)
Friday	Two Buns with a ripe Plantain	Rice Fruit vegetables Salmon Beans Vegetable Mellum leaves	Noodles Potatoes or Dhal Curry Eggs - 01
Saturday	Bread with Pol Sambol	Rice Local Dhal Beetroot vegetable leaves (mellum	Rice Dried fish (fried) Fruit vegetable vegetables leaves (mellum)

5.7 i) **INGREDIENTS REQUIRED TO PREPARE POL SAMBOL FOR 100 PERSONS**

Coconuts of 30 ozs.	No. 10	
Dry Chillies	ozs. 3	(90 gms)
Pepper seeds	ozs. 2	(60 gms)
Red onions	ozs. 3	(90 gms)
Limes	No. 8	
Kitchen salt	ozs. 4	(120 gms)

If necessary green chilies may be substituted for the whole quantity or part thereof.

Leaks 06 ozs. may be utilised as substitute.

ii) **For Yellow Rice** (For 01 Kilo of uncooked Rice)

Order the following items also :

Carrot 200 gms

Leaks 200 gms

Hyco 120 gms

iii) **For Seeni Sambol** (for 100 patients)

B' Onions - 3 1/2 Kg

Chilli Powder - 150 gms

Tamarind - 60 gms

Coconut oil - 200 ml

iv) **For salad of 01 Kilo**

Cucumber / Tomatoes 01 kilo

B Onions 400 gms

v) **For kirihodi** (for 100 patients)

Coconuts - 10

Green Chilies - 200 gms

Limes - 06

vi) **Jam -** Bottle 450 grams for 15 patients

vii) Coconut milk for Kiribath for 01 Kilo of Rice 01 coconut

viii) **Ingredients for Lunumiris**

For 01 Kilo of Green gram / Rice

Dried Chilies 45 gms

Red Onions 45 gms
Salt 15 gms
Limes 02 gms

ix) **Coconut for Green Grams**

01 nut (850) gms for 01 Kilo

6. PLACING OF DIET ORDER ECONOMY IN ORDERING

6.1. Based on the total number of diets appearing in the tabulated form prepared at 11.00 a. m. in respect of all wards and units on each day (patients and staff) 'Raw provisions shall be ordered strictly in accordance with the sanctioned scales (para 5).

Usually a diet is not ordered for admissions after 12 noon until the diet order is placed on the following day at 11.00 a. m. Those admissions could be dieted with the remaining diets of the discharged patients, as far as possible.

If the admissions total seems to be very high, a supplementary diet order may be placed.

Tea, bread, sugar, milk and biscuits could be ordered as a standard amount daily to provide for the new admissions. (Authority from the head of the Department should be obtained and necessary Registers have to be maintained.)

6.2 Relevant Eorms

Form Health 730/730 A/15 for Raw Provisions
Form Health 202 for Milk
It is a must to have carbon paper to obtain the copy in the counterfoil.

6.3 However there is no objection for placing of separate diet orders for employees in institution where a large number of employees are dieted

6.4 To facilitate matters for officer taking requirement of provisions for afternoon and morning may be separately indicated. Items of diets should be ordered under the "diet" column and extras under "Extras" : Columns.

6.5 It has been found in large institutions where mass cooking is done that there is a wastage in items such as vegetables, coconuts, firewood, and curry stuffs and so on, when they are calculated to the last ounce or gram, indicated in the scales. Heads of institutions are advised to use their discretion and introduce a percentage cut to avoid wastage (only for uncooked diets)

6.6 Every encouragement should be given by Heads of institutions to individuals and Associations willing to donate food for patients. Letters of appreciation should be issued in case of all donations. Such donations should be marked on the duplicate copy of the diet order, proportionate reductions should be made from the diet order in respect of donations. No cooked food should be accepted as donations. Donation of raw food need not necessarily be for the total patient population of an institution.

6.7 The heads of Institutions can obtain milk by one of the under mentioned sources to meet their requirements.

i) Fresh cow milk from Farms if there are any in the Locality (with the approval of the Head of the D. U.)

ii) Sterilized Milk from the National Milk Board / Lanka Milk Foods if regular supplies could be arranged.

iii) Full cream powdered milk from the National Milk Board / Lanka Milk foods.

6.8 The Officer ordering diet should daily get down and inspect the "Kitchen book" and reduce whatever items are recorded as remained from the next order quoting the counterfoil number of the diet order on the kitchen book.

6.9 The order shall be signed by the officer who prepared and counter signed by the Head of the institution.

6.10 Duly perfected order for raw provisions and extras shall be issued to the supplier before 11.30 a. m. on each day.

7. RECEIPT OF RAW PROVISIONS

7.1 The Suppliers shall be given written instructions as regards the time at which they shall supply the provisions.

7.2 Taking over of raw provisions should be entrusted to a responsible officer (a Clerk in the Health Clerical Service) along with the diet stewardess. The officer who places the diet order should never be allowed to take over provisions.

7.3 Times of taking over

a) 2.00 p. m. - Raw provisions for afternoon tea, afternoon extras and night meal.

b) 6.00 a. m. - Provisions required for morning tea.

c) 8.00 a. m. Provisions for noon meal and morning extras.

Provisions for morning tea could also be taken over along with raw provisions at 2.00 p. m. and kept in reserve (safe custody) provided, the approval for same is obtained by the Head of the Department in advance.

7.4 No provisions shall be taken over in the afternoon and stored over for use in the morning. For any deviation of this rule prior approval of the relevant authorities should be obtained.

7.5 The quality and quantity should be checked. The quality shall be good and quantity be correct. The officer taking over is jointly responsible with the diet stewardess to this effect.

7.6 The correct number or the actual weight of the item taken over should be clearly recorded in the duplicate of the diet order. Bills of the supplier has to be checked and signed, retaining a copy.

7.7 The full quota or, any portion of any item may be rejected due to inferior quality. The supplier is bound to replace such rejected items.

7.8 When in any doubt regarding quality or quantity consult Dietician / Administrative officer / Head of the institution, immediately.

7.9 a) Coconuts should be accepted by number as well as by weight. One coconut weighing 30 ozs. If the average falls short of 30 ozs supplier must supply additional nuts to make up the correct weight.

b) Ripe plantains should at least be 3" in length and 1 1/2 in circumference.

c) Bread should be in loaves of one pound (400 gms) and properly baked. Accept by weight as well as in numbers.

d) Officers taking over provisions should see rice and other pulses put into water, coconuts are split and tinned foods tampered immediately after taking over.

7.10 All hospital weighing machines shall be checked periodically and all errors corrected and/or repairs effected.

8. SHORTAGES AND ACTION TO BE TAKEN

8.1 All items of raw provisions supplied short or rejected along with any other irregularities if any, should be recorded in the shortages Register (Form Health 945). Replacements of shortages or rejections may be accepted provided those are replaced well within the time for preparation in good quality. Such items if accepted should be recorded in the shortages register mentioning the time of receipt. Quantities replaced later are also to be recorded in the duplicate of the diet order.

8.2 If the supplier does not replace any articles short supplied or rejected in time the head of the institution shall procure the same from some other source subject to conditions of the contract.

In such occasions explanation may be called in writing. If the explanation is not acceptable, the supplier should be served with a Complaint Sheet (Medical 290) and action taken within the conditions laid down in the contract. Habitual defaulters may be reported to the Head of the Department for cessation of the contract and black listing them.

N. B. (In case where the whole provision supply is defaulted by the supplier, same action vide above 8:2 should be taken).

9. SUPERVISION OF KITCHEN HYGIENE

9.1 The Diet Stewardess at all times should maintain the highest standards of hygiene and cleanliness in the entire kitchen in her charge and of its surroundings and premises, including floors, walls drains etc. as well as utensils and equipments.

9.2 She should see to the scrupulous personal cleanliness of the employees in the kitchen, herself setting an example in these respects.

9.3 How to maintain kitchen hygiene and cleanliness:

Personal - Basic requirements of soap, water, etc. should be freely available. Caps and aprons should be provided to the staff and they should be in uniform in the kitchen. As no training is given to the staff working in the kitchen in service education in health, sanitation, etc. Should be reorganized. Medical examinations, at least once a year is essential.

In food preparation and service - Betel chewing to be prohibited. Proper equipment and utensils to be made available. Covered containers for taking food to the wards should be insisted on.

9.4 As far as possible kitchen should be fly proofed. Should ensure proper refuse disposal.

9.5 Attention should be paid to keep the building maintenance of kitchen (such as walls, floors drains and so on) up to date. Cleaning a kitchen with damaged walls, floors etc. is almost impossible.

9.6 Head of the institutions / Administrative officers / Dieticians / Matrons are expected to carry out surprise inspections in maintaining kitchen hygiene and cleanliness.

10. DISTRIBUTION AND SERVING OF DIETS

10.1 At the kitchen

Usually in bulk, and the presence of the Diet Stewardess is a must. The labourer is responsible for the food after it leaves the kitchen, and till it reaches the ward. There should be a white black board indicating the ward Nos., number of patients and the quantities of food per ward. A scale at the service counter is ideal as the labourers can then check if there is any doubt about quantities in a Register. Chit system may be introduced to avoid confusion and delay. Properly covered containers should be sent from the wards. Rice will treble in weight when it is boiled. Fish should be in 02 ozs. Pieces.

10.2 In the ward

Responsibility of the Sister or the Nurse i/c. She should take over and distribute the food. If scales are not available, household measures should be used. They must be aware of weights, measures and quantities - e. g. egg, milk, butter, sugar etc. as such. Extras should be served separately and a list of extras and its distribution must be available in the ward daily. The diet of one patient should not be divided between two. Assistance of the ward labourers could be obtained in distribution. Any shortcomings should be noted and the Diet stewardess informed immediately.

10.3 Employees' Diet

A Diet card system may be introduced for employees to avoid repetition, confusion and delay.

10.4 Diets must be served to patients and employees at the following times as far as possible.

a) Afternoon Tea - 2.30 p. m.

b) Night meal - 5.30 p. m.

c) Morning Tea - 6.30 a. m.

d) Noon meal - 11.30 a .m.

Extras shall be given at these times except, when considered necessary to be given at other times.

II. TEST CHECKS / SURPRISE INSPECTION

11.1 Inspections shall be carried out by the Head of the Institution or a person with delegated authority in regard to the taking over of provisions and records maintained in the register of surprise inspection. He may test check few items in weight and numbers as the case may be.

11.2 At least 04 surprise inspections should be carried out for a month at irregular intervals.

11.3 **Tasting of Samples**

The cook who is in-charge of cooking has to get the samples of the menu tasted by Head of the institution/Administrative or by any other authorised officer.

CHAPTER 35

LINEN SERVICE

INTRODUCTION

It is extremely important to provide sufficient clean linen as and when required for proper patient care. Regular change of clean linen is a well recognised preventive measure to prevent cross infections. It also makes the patients' stay more comfortable.

OBJECTIVES

1. To prevent cross infections.
2. To provide a pleasant environment, for patients, workers and the public.
3. To provide quality patient care services.

(1) PLACES WHERE HOSPITAL LINEN IS REQUIRED

1. Hospital wards
2. Out - patients department
3. Labour rooms
4. Operating theatre
5. Baby rooms
6. Official quarters

(2) Types of linen specially used in particular places.

A. (a) **Hospital Wards**

Bed sheets

Pillow cases

Mattress covers

Hand towels

Bath towels

Dusters

Door curtains

Window curtains

Check cloths

Shirts

Jackets

Screen Curtains

B. **Out patients Department**

Screen curtains

Door curtains

Window curtains

Hand towels

Dusters

Check cloths

Pillow cases

C. **BABY ROOMS**

Cot lining

Baby shirts

Napkin

Dusters

Cot shirts

Curtains

Overalls

Masks

Nurses' Frocks

Pyjama suits

D. OPERATING THEATRE AND LABOUR ROOMS

Overalls

Nurse's frocks

Pyjamas

Pyjama shirts

Masks

Caps

Operating theatre sheets

G. S. Towels

Leggings

Wrapping towels

Machine covers

Dusters

Nurses' frocks

Pyjama suits

PERIODICITY OF CHANGING LINEN

1. WARD BED LINEN

a. To receive a new patient

b. After soiling

c. After death of a patient

d. Once in 3 days as a routine for same patient

2.	i.	Curtains	-	Once a week
	ii.	Hand towels	-	Change twice daily
	iii.	Operating theatre linen	-	After each operation
	iv.	Labour room	-	After each delivery

Linen needs in preparing an ordinary bed in a ward.

Bed sheets large	2 (90"x72")
Draw sheets	1
Mattress covers	1
Pillow cases	2
Mackintosh	1 meter

sufficient sets should be available in a ward to cater to shortfall of laundered linen during rainy season.

LINEN POLICY

01. Bed linen in white and other materials in self colour.

02. Hospital linen should be supplied by the state.

03. Donations of linen is permitted, but accepted within the norms laid down by the administration.

04. Bed sheets pillow cases etc. should be in the same size in all the hospitals.

05. All hospital linen should be in cotton material and washable.

06. Private linen should not be used except for personal wear.

07. All patients going into the operating theatre and labour rooms should be in white clothing.

08. Keep linen hampers to collect dirty linen and soiled linen, separately.

09. If private linen is used wash before dispatching them home.

10. Provide linen rooms to store linen adequately in each unit.

11. Provide linen carts to transport dirty linen to the laundry. Number should be determined according to the requirements of the particular hospital.

12. Put mattresses to the sun for disinfection.

13. Debugging should be done under the supervision of the public health inspector or overseer.

PROCUREMENT

1. Director / MS shall take suitable measures to maintain adequate supply of linen to their hospitals.

2. For this purpose he shall place his annual requisition to the Govt. Supplies department.

3. The ministry has no objections for hospitals accepting donations of linen.

4. All linen obtained should be accounted for and duly taken into the inventories.

5. All donations shall be accepted while maintaining the general norms of accepting such linen.

MAINTENANCE OF LAUNDRY BOOKS

01. Maintenance of laundry books is the responsibility of the sister / nurse in-charge of the ward. She can delegate her duties to a junior nurse when necessary.

02. Laundry account book health 87 should be written in triplicate, one to the laundry man, one to the office and one copy will remain in the book for auditing purpose. These registers should be audited once in 6 months.

03. Any shortage of linen when returned from the laundry should be recorded on the reverse of the relevant page of H87.

04. The signature of the laundry man or the contractor should be obtained for shortages.

05. Linen which is used by the hospital only can be entered in this book. Private linen is not entered.

DONATION OF LINEN

01. All donations should preferably be received by the Director / M. S. of the hospital.

02. A letter of thanks should be sent to the donor.

03. All items donated should be inventorized.

04. If a donation is given to a particular ward or a unit M. S. / Director should authorise issue of the items to the particular ward. Sister in-charge or nurse in-charge should take them into their inventory.

05. All donations should be entered into a separate donation register maintained by the authorised officer in the particular hospital.

06. Donations should not be received from the public by the ward staff without prior approval from the Head of the Institution.

LINEN REPAIR SERVICES

01. Linen repair services and identification marks should preferably be done in the central linen supplies department under the supervision of a senior nursing officer.

03. Every piece of linen has to be repaired properly before sending them to the wards for use. Torn linen could be damaged further by use as such damaged linen should not be sent to the ward.

04. It is always better to put the year and month of issue on every piece of linen so that at condemnation, life of the linen can be assessed.

CONDEMNING OF LINEN

01. Un - serviceable linen for condemning should be sorted into inventory categories.

02. Nurse should bundle them according to the inventory numbers and labelled.

03.. General 47 form should be completed.

04. Authority from the Head of an Institution to condemn the linen should be obtained.

05. The nurse shall produce the linen listed for condemning, to the Board of Survey.

06. Once the Board of Survey approves the condemning of the linen. Written authority from the Head of the Institution should be obtained for condemning and write off.

REPLACEMENT OF LINEN

Replacement of linen is based on the total number of different items sent for condemnation.

MAINTENANCE OF INVENTORIES

i. Main linen inventory is with the Chef Clerk or his assistant.

ii. All inventory items except surgical items shall be requested from the officer in charge of the General Inventory.

iii. All items coming under the General Inventory received at Ward or Unit level should be included in the Unit Inventory and acknowledged.
(Inventory Book - Health 501)

iv. Nursing officer - in - charge shall maintain the following books and registers.

   a. Linen Request etc. Book Health - 500
   b. Linen incoming book - Health - 503
   c. Laundry Book - Health - 87

v. Prepare and issue items to junior staff under sub - inventories.

vi. Nurse in - charge or her representative shall check all the sub - inventories once a week.

vii. If a shortage is detected, she shall inform the officer - in - charge in writing, without delay.

viii. Any linen torn but sewable shall be sewn with the assistance of the Seamstress.

ix. All Clean and soiled linen should be stored in their proper places, under lock and key.

x. Keys of the linen cupboard should be safely kept by the Nurse in charge.

xi. Linen necessary shall be issued when necessary.

xii. Linen needed for the night shifts shall be issued to the night Nurse, before signing off for the day.

xiii. All washable soiled or dirty linen shall be handed over to the laundryman for washing.
(Use Laundry Book - Health 87)

xiv. On receipt of clean linen the Nurse shall prepare (Health 87 in triplicate and the original and duplicate copies sent to the Head of Institution.

STERILIZATION OF LINEN

Units where sterilized linen is required.

i. Labour Room

ii. Operating Theatres

iii. Sick Baby Units
iv. Burns Units
v. Surgical Intensive Care Units
vi. For Surgical Procedures in wards.
vii. Premature Baby Units
viii. Plastic Surgery Units

Sterilization preferably autoclaving at 134° c for 30 mts., 5 lbs/ Pressure per square inch.

Procedure when there is a death

i. Bed linen must be changed after removing a dead body.
ii. All soiled linen should go to the soiled linen tank with disinfectant lotion.
iii. Ward sanitary labourer should clean them before they are sent to the laundry.
iv. Wash the mackintosh with a disinfectant lotion and allow to dry in the shade.
v. Carbolise the bed.
vi. Mattress and pillows should be put in the sun.
vii. Prepare the bed with clean linen after removal of the body.

In whose costody is the Linen?

01. Keep the linen in custody of a trained nurse in the wards or in any special unit.
02. Clinic linen should be under the custody of a nurse / attendant.
03. Hospital labourers should not be held responsible for the linen inventories (in the tertiary care hospitals)
04. Workers who wear hospital uniforms should be responsible for their sets of uniforms if they were supplied ready made by the hospital.

UNIFORMS

CONTROL OF LOSS OF LINEN

01. Responsibility of the linen services is the Job of nursing staff. However all categories of workers are responsible for the losses and to minimize losses : entire staff working in the wards and clinics should take adequate care in protecting linen.
02. General No. 427 should be brought to the notice of all staff nurses working in the wards.

03. Prepare sub - inventories and fix responsibilities.

04. Maintain system of daily and weekly checks of ward linen in use. Report promptly, when there is any loss.

05. Avoid use of private bed linen in the wards. Supply adequate clean linen to each patient.

06. Prepare hospital linen according to standards laid down.

07. Name of the hospital and the Department should be properly marked with marking ink on every piece of linen and marked linen should be issued to the wards.

08. Obtain signature in a book when issuing uniforms to staff.

09. Check and store linen when brought by the laundryman.

10. Maintain issues and receipts in a laundry book. (No)

11. Only the sister or the Nurses in-charge should handle linen to prevent pilferage. Have a separate linen room in each ward or unit.

CONTROL OF INFECTION

01. Infected linen should be kept in a separate container or tank.

02. Handle with care to prevent spread of organisms.

03. Workers should be in their protective clothes, while handling infected linen.

04. Containers used in transporting soiled linen must be cleaned with detergents and water daily.

05. If an inhouse system of laundry is available, sufficient laundry bags need to be supplied to the wards for infected linen.

06. Linen hampers are kept near the beds for collection of used linen.

07. Infected or used linen should never be put on the floor.

08. Infected linen should be removed from the patients' area in a separate container.

09. Soak infected linen in a container with T. C. L. Lotion, before removing to the laundry.
(Mattresses and pillow cases should be put out to the sun)

10. Containers for dirty linen should not be allowed to over flow. Remove them when three quarters filled.

11. Dirty linen should not be sorted out inside the wards or in public corridors.

12. Linen from patients infected with scabies or lice should be treated as infected linen.

13. A poster should be displayed in each service room indicating care of infected linen and other used linen.

14. Use a separate trolley to transport dirty linen, wash the trolley after each collecting round.

15. Workers' and patients' education on prevention and control of infection due to the linen, should be high - lighted.

TYPES OF LINEN SERVICES

There are four main ways of keeping hospital linen cleaned.

1. **DAILY DHOBY SYSTEM**

Removal of soiled linen from the ward daily and return them on the same day after washing.

2. **CONTRACT SYSTEM**

Soiled and dirty linen is taken away for washing by a contractor. Washing would be done either manually or mechanically.

3. **CENTRAL SUPPLIES**

Washed in the hospital laundry which is attached to the Central Supplies Department.

4. **DOMESTIC WASHING MACHINE**

Laundering linen by washing machine installed in a ward. This could be done by the ward staff.

1. **DAILY DHOBY SYSTEM**

Removes soiled linen from the ward daily and returns the washed linen on the same day. It is more suitable for smaller hospital.

DISADVANTAGES OF DAILY DHOBY SYSTEM

i. Environment looks unpleasant when clothes are on lines

ii. Environmental pollution by unclean linen and dirty water.

iii. Contamination of the washed linen by drying them on the floor.

2. **CONTRACT SYSTEM**

This was the most common system of linen services in the hospitals during the past. This method is satisfactory if there are adequate facilities for washing and drying.

3. **CENTRAL LINEN SUPPLY SYSTEM**

The hospital provides the laundry service the washing been done manually or using washing machines. The laundry is under the central supplies department and is responsible for washing, repair of linen and condemnation of unusable linen.

ADVANTAGES OF AN INHOUSE LAUNDRY

1. Safe handling of the soiled linen.
ii. Better linen control by supplying adequate stock daily.
iii. Complete control of wash formula to maintain cleanliness. Whiteness and to increase the life of linen.
iv. Complete control of stock supplies.
v. Control of economy by assessment of the requirements and preventing loss and pilferage.
vi. Less Problems due to inclement weather.
vii. Easy recovery of lost items

Distribution of Linen

The cooperation of the nursing service has been in large measure, responsible for both patients and nursing personnel.

4. **Domestic Washing Machine**

This could be used to wash linen in a unit or ward such as baby room, Labour room, operating theatre or paediatric ward. Ward workers can maintain the entire services but it needs adequate drying space.

It is important to organise centralized linen service in every hospital. Clean linen and the surrounding appeal to the patient and the visitors, and help in establishing better inter - personal relationship among all. A conscious effort by the nurses and administrators would go a long way in making the patients' hospital stay comfortable.

Some General Remarks

1. Materials shall be in cotton and washable.

2. Private linen should not be used except for personal attire.

3. All patients who are going to operating theatres and labour - rooms should be in hospital linen.

4. Public donations shall be accepted, but should conform to standards of hospital linen.

CHAPTER 36

COMMUNICATION FACILITIES AT Secondery and Tertiary CARE INSTITUTIONS.

All hospitals should have a well maintained and an efficient telephone system. The number of incoming lines and the size of PABX would depend on the number and size of all facilities in the hospital and including the residential quarters.

The advice of the telecommunication engineer should be obtained before a new system is installed but the administrator should have a rough guideline as to the number of extensions necessary, Priority must be given to patient areas, on call medical officer's quarters, the ambulance drivers rest rooms and least priority would be stores complexes, linen room etc. It is very prudent to provide adequate number of telephones to the operating theatre, intensive care Unit and the blood bank and at least one each per nurse station.

Funds being available a fax machine in the administrator's office would help in transmission of information to other hospitals, Provincial and Central head quarters.

Public telephone booths placed strategically in the out patient department and one per floor would be of convenience to patients and visitors.

Telephone exchange / PABX

This is a very important facility which administrator stends to neglect. The room housing the exchange should be airy or air conditioned preferably with toilet facilities. It

must be secure with no access to the public. Adequate and comfortable furniture should be provided. A disgruntled and an untrained operator is a source of embarrassment to the administration and a source of irritation to the out side world.

It cannot be over emphasized that a well maintained telephone system and trained pleasant operator provided with basic comforts would be a pride to the institution since the telephone is one of the windows through which the community would view the hospital.

Provision of official telephones to residence

Official telephones are provided to residence of certain categories of staff. The grade and salary scale approved to qualify for such facilities as at 14.07.93 were as follows.

Officials in class II/grade I and above ie. Officials placed on a salary scale 552007x2400-72000 or above. However secretary to the ministry has been empowered to approve provision of this facility to other categories of officials considering the exigencies of service as determined by him.

On approval an application prepared in terms of FR 930 has to be forwarded to the Managing Director of Sri Lanka Telecom and a register maintained in accordance with FR 929.

Transfer of Telephones on change of station

Though official telephones have been provided to selected public officers, ownership of such telephones rests with the relevant Heads of Departments. Hence, with the transfer (Change of station) of an officer possessing an official telephone, the Head of the Department could reallocate the telephone to the succeeding officer or he could decide on disconnection or to acquire it for the use of his department.

Transfer of Telephones on change of residence

This could be effected under FR 931 by submitting an application to the M/D Sri Lanka Telecom. In the event that the officer concerned, changes his residence at his own free will, the cost estimate for reinstallation has to be borne by him as per FR 931 - 111. However, in such instances the Secretary Health Ministry could take a final decision.

Telephone Bills

In the event of obtaining private calls from official telephones (installed in offices) a register has to be maintained (FR 933) under the following headings. Also prior approval has to be obtained from the sectional head or his representative.

Date	Name of Officer initiating the call	Duration on of the call	No. dialled	Signature of officer initiating the call	Signature of the staff officer	Other remarks

An extract of the above register has to be submitted to the Head of the Department at the end of the month; charges for private calls thus obtained has to be deducted from the salary of the person concerned In the settlement of bills pertaining to an official telephone installed at residence, a 10% levy from the monthly bill or a deduction of Rs. 100/= (Which ever is less) has to be made as per P. A. Circular 19/90 (1) of 02.10.1990.

IDD Facilities

A Public officer could utilise the official telephone at his residence for international calls with prior approval from the Head of the Department on condition that such bills, are paid by the officer from his personal funds.

Conversion of Telephones - from official to private

In the event that the officer provided with an official telephones makes an application to convert the official telephone at residence into a private telephone on his retirement or expiry of his service; the Head of the Ministry / Department could decide in favour of the application or decide to disconnect it or reallocate it to the succeeding officer or acquire it for departmental use.

CHAPTER 37

HOSPITAL SANITATION

1. What is Hospital Sanitation

Sanitation literally means cleanliness. It is improving of conditions that affect health. It is the branch of knowledge designed to obviate environmental influences injurious to health. Hospital sanitation thus means a science of health dealing in ensuring healthy conditions of living in the institutions where sick persons are treated.

2. Importance of Sanitation

Sanitation in the hospital is one of the important aspects in the patient care services in the hospitals. It is not merely keeping the wards and sanitary annexes clean and tidy, but making the whole environment free of pollution and conducive to the inmates of hospital like a home. It has to create a pleasant environment in and around the hospital to upkeep the quality and efficiency of patient care.

It involves -

1) Sanitation of Hospital Premises
2) Sanitation of Hospital Water Supply
3) Disposal of refuse
4) Disposal of Human Waste
5) Control of Vectors & rodents

6) Control of Pests
7) Laundering of Linen
8) Food Sanitation
9) Disposal of Unserviceable articles
10) Disposal of Dead bodies
11) Control of cross infection
12) Control of radiation hazards.

2.1 Sanitation in the Wards.

Should be kept clean and tidy all the time. Shall be swept and mopped with antiseptic lotion or detergent fluids twice a day before the morning and afternoon ward rounds preferably before 7.30 a.m. and 01.30 p.m respectively and whenever necessary.

Dirt of any description that may be accidentally deposited on the floor or elsewhere in the ward shall promptly be removed. Floor of all wards shall be regularly washed at least once a week.

The Furniture such as almyrahs, meatsafes, benches, lockers, cupboards, tables, dining tables & chairs are to be cleaned daily and applied with polish or varnish once in 3 months. The trolleys, wash basins and sinks should be cleaned daily.

Utensils used in the wards for serving food and drinks should be cleaned with soap and water after use, and immersed in boiling water to get rid of pathogens.

Decoration of wards with flower vases, pictures hung on walls (or painted on walls) and potted plants kept along the corridors of wards would create a homely environment.

2.1.1 Debugging

It is essential that debugging of furniture and beds should be carried out at regular intervals. The nurses should ensure the debugging under the supervision of the PHI of that area.

2.1.2 Sanitary annexes

The sanitary annexes should be kept spotlessly clean all the time. It should be washed as frequently as possible. The toilets should be cleaned at least 4 times a day and twice in the nights. In the day time it may be around 07.30 a. m., 10.30 a.m., 01.30 p. m. and 4.30 p. m. and in the nights may be around 07.30 p. m and 04.30 a. m.

Spraying the floor of toilets with antiseptic lotions or detergent fluid is preferred. Protective wear (caps, masks, gloves, plastic aprons and boots) may be provided to sanitary

labourers while working. They may be provided with tongs and enamel pails to remove and collect dirty towels, rags, pieces of cloths, papers and sanitary pads thrown into the toilets by patients before flushing.

2.2 Drains

Drains in the hospitals must be maintained perfectly for the complete draining of the surface water from the premises and waste water from kitchen and bathrooms. Drains should be maintained regularly and damages if any attended to then and there. Drains should be cleaned and blocks removed promptly to allow the free flow of drained water without stagnation.

Sewerage

The sewerage lines, catch pits, soakage pits etc. should be supervised regularly and kept without blocks, Each institution may be provided with cleaning rods for the removal of such blocks when noticed.

Surroundings

Around the wards along the corridors and the drains, around the catchpits, soakage pits and water Sumps, grass to a width of about 2 feet should be cut neatly and flower plants planted. Implements for such purpose such as mammotty, veesikathy, crowbar etc. Should be provided.

Lawns

All lawns in the hospital premises should be mowed and kept clean. Wherever possible seats made of concrete slabs or iron must be provided for the patients to sit and relax. Rest parks for patients and play parks for children may be maintained in lawns. Wherever possible a lawn mower may be provided.

Flower Gardens

Flower garden is a must in every hospital; It may be grown in front, along the sides of wards and corridors. Shady trees may be grown in the hospital premises wherever possible.

Back Gardens

Backgarden should be regularly weeded and maintained. Best is to allow the employees to grow vegetables if they wish. It may be divided in to small plots and allocated to employees for them to maintain.

Kitchen

Kitchen should be of modern type and fitted with modernized cooking utensils. For safe cooking either gas or electricity should be used. Firewood is prohibited or not encouraged at all. Should be well maintained and repairs effected as and when they occur. It should be colour washed regularly and kept in good condition.

Utmost attention shall be paid to the cleanliness of meat safes, kitchen tables, chopping blocks, cooking vessels and utensils. Fly proofing in the kitchen is a must. All kitchen wastes are removed promptly. Each day at the end of cooking, it is washed. All staff shall wear aprons and caps provided to them while working in the kitchen. The head cook and diet stewardess shall be responsible for the condition of the kitchen and all the utensils used therein. Kitchen drains should be cleaned 4 times a day and whenever necessary.

Labour room

Labour room must be a modernized labour room with marble tiles for floor and lower 2/3 of the walls. It must be well ventilated and adequately lit. It must be divided into three sections, pre-stage room, delivery room and post - delivery room. Labour beds must be of modern type and adjustable for emergency lower forceps delivery. It is a place where cross infection can easily take place and thus should be kept clean and tidy all the time. It should be mopped with antiseptic lotion or detergent fluid twice daily. Blood stains should be removed then and there. Wastes and placenta are disposed of promptly the soaked linen may be removed and washed promptly. Cleanliness in the labour room is the responsibility of the midwife / Nursing officer.

Each labour bed should be provided with mackintosh and a cover sheet. Mackintosh should be washed and dried after each delivery. The cover sheet is washed dried and given to Dhoby.

Equipment and instruments used in labour should be washed and sterilized before being used again.

Mortuary

Mortuary should be sited in a suitable place well away from the wards and fitted with refrigerators or mortuary coolers to keep at least 4-12 bodies at a time.

It should have the J. M. O's room and a room for doing post - mortems. In tertiary hospitals it is also essential to have a fairly big room with seating arrangements to do pathological post - mortems.

It may be provided with a cart to carry the unclaimed bodies to the burial grounds. A separate stretcher should be used for the transport of dead bodies from wards to mortuary.

Bystanders

Should not be allowed unless very essential and recommended by the MOO in the wards and approved by the Head of the institutions.

No Chewing of betel and no smoking is allowed in hospital.

Path. Laboratories

This is another place in the hospital, where sanitation must be well maintained. This is a place where many infected pathological wastes are examined. So there is a possibility for the staff to contact disease. All the pathological wastes and other specimens brought to the lab should be handled carefully and disposed of completely. Best method of disposal is by incineration.

All collection bottles should be adequately autoclaved before reuse.

Staff must be provided with the required protective clothes while working. In service training in proper handling of specimens is needed for relevant staff.

Operation Theatre

The Operation Theatre should be well lit and adequately ventilated and air conditioned.

This is another place where sanitation and strict sterility is to be maintained. Theatre should be mopped up at the end of each session of operation. Blood stains and other wastes surgical remnants should be removed then and there. The used linen (Towels) should be washed thoroughly before autoclaving.

It should have water adequately running in the taps.

Radiology Department.

Radiology Services may pose a threat to staff unless properly monitored. It is thus necessary to have a control over exposure to ionizing radiation. Protective coverings and adequate and updated knowledge on this subject to the staff concerned is very important. Disposal of chemicals used in radiology, needs careful

- Construction
- Use of decimeters
- Regular inspections

OPD / Clinic

Should be spacious and adequately ventilated. It should be provided with seats for the patients to be seated while waiting to take treatment or to see the clinician.

It may be provided with educational posters, picture cards, flash cards, pamphlets and books.

Smoking or betel chewing should be prohibited.

Blood Bank

Should be kept all the time clean and tidy. Special attention should be paid in disposal of discarded or spoilt blood.

Adequate attention must be taken to prevent blood being contaminated.

All utensils, glass ware and slides used in handling blood should be washed thoroughly and sterilized.

ICU/ETU

Extra care must be taken in maintaining sanitation in ICU/ETU as patients in these places are more prone and vulnerable to infection.

Children's' Wards / PBU

These places should be kept very clean as children and babies (Specially premature) are more prone to get infected.

WATER SANITATION

Usually the water supply to a hospital is pipe borne and from the town supply. In places where there is no such supply water is obtained from separate sources, such as a spring, well, river or tank. In all instances, the water supply should be safe and adequate.

All water for drinking purposes shall be boiled in the wards by providing electric kettles or boilers to the wards. Where electricity is not available it may be boiled in the kitchen and stored in receptacles in the wards. Where the water supply is not from the town supply, the range PHI should regularly chlorinate the well or overhead tank.

Water samples from these wells, pumps or other sources should be subjected from time to time to bacteriological analysis.

PURIFICATION OF WATER

Water should be rendered safe for drinking and domestic use.

Methods employed

1) Storage
2) Filtration
3) Disinfection using chlorine or other chemicals
4) Boiling

Storage

It reduces the bacterial count and suspended matter in water, the amount of NH_3 and O_2 demand is also reduced.

Filtration

Two main types are in common use -

1) Slow sand filter, and
2) Rapid sand filter.

These filters are used in purification of public water supplies.

Chlorination

It is an extremely useful method of purification not only for public water supply systems but also for individual supplies. Chlorine is a powerful disinfection, effective against most types of bacteria associated with water borne diseases and also against some cysts and ova -

Chlorine is used in its gaseous form dissolved in water or as a hypochlorite. Hypochlorites in common use are sodium hypochlorite, calcium hypochlorite and tropical chloride of lime (TCL or Bleaching powder).

Chlorine reacts very rapidly with various organic substances in water which reduce the amount of effective chlorine available for disinfection e. g. sulphides and ferrous salts. So it is very essential to find out the amount of Residual chlorine which remains in the water a specified period of contact for disinfectant action or bactericidal action.

It exists in 3 forms :

1) Hypochlorous acid or free chlorine
2) Chloramines

3) Chlorinated organic matter, after a contact period of 30 minutes, the strength of residual chlorine should be at least 0.2 mg/litre (or 0.2 parts / million). In order to determine the amount of bleaching powder required for a particular water supply, The following formula may be used.

$$P = \frac{C \times L}{B \times 10}$$

Where

P - grams of bleaching powder
C - PPM selected
L - Volume of water to be chlorinated in litres
B - % of chlorine in bleaching powder (33%)

Chlorination of wells

Bleaching powder (TCL) is usually recommended for use rate is 1/2 oz. to 1 oz, per 1000 gallons of water. To calculate the volume of water (in gallons), the following formula may be used for circular wells.

D2 x W x 5

D - Diameter of well in feet
W - Depth of water in well in feet

For square or rectangular wells volume may be calculated by

L x B x D = Cubic feet
6.25 gallons = 1 cu. ft.

Disposal of refuse

Proper disposal of refuse is an important activity as otherwise there is a constant danger of breeding flies, mosquitoes and emanation of offensive odours.

Dustbins with covers should be kept in the wards for collection of refuse in the wards. These are to be emptied at least twice a day and whenever necessary. After emptying the dustbins should be washed and dried. Plastic dustbins are preferred. For taking refuse to where the refuse is deposited for final disposal, hand carts may be provided. Clinical wastes are kept separately for disposal by incinerator.

Sharps disposal - Sharps should be collected separately in disposable bags and burnt.

Final disposal of refuse

There are different methods of disposal of refuse. Whenever local authorities are available arrangements could be made with them for final disposal in council dumping

grounds. Municipal dustbins (big ones) may be installed in the hospital in an accessible place for collection by the local authorities. Where such facilities are not available, it should be properly trenched or burnt. Kitchen waste and waste meals from wards may be collected separately and disposed of suitable. Sharps should be collected, separately in disposable bags and burnt. Clinical waste, pathological wastes etc. Should be disposed of by incineration.

Solid Waste Disposal

Disposal of refuse

Principal methods of refuse disposal are -

a) Dumping
b) Controlled tipping
c) Incineration
d) Composting
e) Burial

Dumping

Dumping of refuse is used as a method of disposal by many local authoriies chiefly as a means of reclamation of low lying land. It is insanitary, creates health hazards. It is a nuisance and causes environmental pollution. It should be discouraged.

Controlled tipping

It is a more satisfactory method of disposal and should be adopted in preference to indiscriminate dumping.

In this method refuse is tipped in layers of not more than 6-8 ft. and covered with a layer of earth 9-12 inches on all sides exposed to air.

Methods commonly used for controlled tipping -

1) the trench method
2) the ramp method
3) the area method

Incineration

This involves the complete destruction of waste matter by burning. This is very hygienic method of choice for disposal of septic refuse from hospitals. It requires high capital investment, high operational and maintenance costs.

Composting

Composting is a process used to control the natural decomposition of organic matter to produce a humus like material called compost which is used as soil fertilizer.

Aerobic decomposition
Anaerobic decomposition

Burial

Trench or pit

2 x 1 1/2 x 1 1/2 meters

Disposal of human wastes

Human wastes in hospitals may be classed under the following categories :

a) Excreta
b) Septic materials
c) Products of conception and remnants of surgery

a) Excreta

I) In urban areas - The method of choice is waste carriage system which removes excreta and liquid wastes through a system of pipes (sewers) to a common disposal carried out after treatment. However in Sri Lanka this type of large sewerage systems are in operation only in the municipal area of Colombo and its suburbs.

In many other major cities, there are small sewerage systems with treatment plants in operation. Some of the provincial and base hospitals do have these sewerage schemes with treatment plant installed.

II) In rural areas, waterseal latrines -

a) with lateral soakage pit.
b) with septic tank and soakage systems are in existence.

However tertiary hospitals must be provided with sewerage system with a treatment plant to treat the effluent before disposal.

b) Septic Materials

Sputum, discharges, infected body fluids are disposed by incineration.

c) Products of conception and remnants of surgery should be disposed of by proper burial or best by incineration. So it is recommended that every tertiary hospital in the island should have an incinerator.

CONTROL VECTORS & RODENT CONTROL

Every step should be taken to control vectors and rodents in the hospitals. Breeding places of flies and mosquitoes should be avoided. If identified, remedial action must be taken to destroy them. They are found to breed in refuse dumping pits and cowdung, while mosquitoes are found to breed in soakage and catch pits and sewerage lines.

To Control flies dipthrex may be used in wards and dumping pits. To control mosquitoes a monthly cycle of spraying of malathion may be considered. Rodents may be either trapped and destroyed or poisoned.

3. Control of Pests

Cattle nuisance

Cattle shall not be allowed under any circumstances to graze or to be kept in any hospital premises. A suitable perimeter fence with barbed wire or parapet wall should be put up to prevent cattle entering hospital premises. Cattle traps may be constructed at the gates.

Stray dogs and cats

Stray dogs and cats should be eliminated from the hospitals. Director / M. S. Shall get them disposed of with the assistance of Public Health Veterinary services.

Strychnine may be used to poison the dogs and cats.

4. Laundering of linen

Bed linen should be changed once in 3 days or more frequently when necessary. Should be changed on every admission, discharge or death. The soiled linen from the wards should be at once conveyed to and kept in the soiled linen room until it is given to the dhoby.

Soaked linen with blood, vomitus or faecal matter may be washed at once, dried and kept for laundering.

Infected linen should be soaked in 2% TCL solution for about 1/2 hour, washed and dried before kept for laundering.

Installation of a washing machine in each institution or for a group of institutions may be considered.

5. Disposal of unserviceable articles

This consists of -

1. General stores items
2. Consumable items
3. Linen
4. Furniture
5. Hardware
6. Surgical
7. Drugs

Every three months or more frequently (if required) unserviceable articles lying in institutions should be collected, Board of survey done, condemned and destroyed.

In many hospitals it has become the habit of keeping these unserviceable articles in the wards along the corridors and other places, the reason being the lack of space to store them in one place. It is also noticed that in many hospitals the items are not condemned at regular intervals of 3-6 months but allowed to accumulate for many years. This is very unsatisfactory. The head of the institution must see these unserviceable items are stored properly and are disposed of regularly.

6. Food Sanitation

Food for the patients and the employees are to be cooked in the hospital kitchen and served. No cooked food from outside should be served.

All raw provisions obtained must be kept in the stores fitted with fly proof nets.

Meat safes should be used all the time to keep the cooked food under custody.

All cooking utensils should have lids or covers to prevent contamination by flies and lizards.

Diet stewardess shall be responsible for the condition of the kitchen and all the utensils used therein.

Cooking with firewood should be discouraged. It should be either gas cooking or electricity cooking.

All utensils and vessels used for cooking should be washed before and after cooking.

7. Disposal of dead bodies

There should be a mortuary fitted with 6-12 refrigerators (coolers) to keep 6-12 bodies at a time. Mortuary should be in a place separate from the wards.

May be provided with a cart to carry the unclaimed bodies to the burial grounds. A separate stretcher should be had for the transport of dead bodies from wards to mortuary. Great care must be exercised in handling and disposal of infected dead bodies.

8. Sanitation Register

The services of the PHI of the area / hospital PHI are available to the Director / M. S. of the institution to supervise the maintenance of sanitary condition of an institution and its surroundings. If there is no hospital PHI, the PHI / range where the hospital is situated is responsible for overall supervision. He should visit the hospital as frequently as possible. He maintains a sanitation register where he should make his observations and suggestions regarding sanitation. This register should be submitted to head of the institution who then takes suitable action on the recommendations of the PHI. PHI range should visit the hospital at least once a week.

Who is responsible for sanitation

Sanitation is mainly the responsibility of the administration. It should be supervised by the House Officer, Sister / Senior Nurse in charge, PHI Hospital / Range and Overseer.

Maintaining cleanliness in wards, sanitary annexes, drains of close proximity are the responsibilities of labourers attached to the respective wards. They are to be supervised by the Nursing officers in - charge of the ward.

Maintenance of lawns in the hospital, flower gardens in front, garden behind, patients rest park and children's play park are the responsibilities of overseer.

CHAPTER 38

TRANSPORT SERVICES

Brief Introduction

The importance of an efficient transport service needs no real emphasis, as transport facilities are directly related to quality and quantity of services provided through health Care Institutions.

There are two aspects of transport.

a. Transport facilities outside the direct control of the Ministry of Health. eg. Public Transport for Patients and Staff. Health Managers are expected to co-ordinate as much as possible with the Transport sector for the needs of the above categories.

b. Transport facilities within the Health Care System.

Objectives of Transport Facilities

1. To provide transport to the needy sick.
2. Transport material needed for patient care
3. Transport of personnel needed for urgent patient care.

Types of Transport facilities Available

1. Ambulances
2. Jeeps, Vans, Double Cabs
3. Buses
4. Cars
5. Lorries
6. Bowsers
7. Tractors
8. Bicycles
9. Motor bicycles

Ambulances

Ambulance is a vehicle used primarily for the transport of the seriously sick or the injured.

Ambulances should be used for the following :

a. For the transport of patients who are seriously ill or injured from one institution to another. This is necessary when acceptable care cannot be provided at the transferring hospital.

b. For the transport of seriously ill maternity patients within the area served by the Ambulance to the Hospital whenever summoned by a Government Midwife.

c. For the transport of Convalescing patients from the major hospital or specialized institutions to a local hospital to relieve over - crowding in specialist institutions. (Only when patient cannot afford the back transfer and when the ambulance is not immediately needed for a very ill patient.)

d. Mothers after confinement to their homes if considered necessary by Head of the Institution for any special reasons.

e. Persons seriously injured and within the areas served by ambulance to the Hospitals whenever summoned by an officer - in - charge of a Police Station or by a Divisional Secretary.

f. For summoning of a Medical Officer in a Medical or a Surgical emergency or to get down an urgent drug.

g. Transport of inward patients to a specialized clinic.

* To minimize the number of trips, all Drivers of Ambulances should be instructed to comply with the following instructions strictly.

1. Drivers should touch down at the Institutions on their way to Higher Level Hospitals and inquire whether there are patients to be transferred from these Hospitals whenever possible.

(To be done only after consultation with the Medical Superintendent / Director regarding urgency of cases being transported.)

2. Such patients should be loaded immediately and the ambulance should be dispatched without delay.

3. Similarly on its return journey, the Ambulance should transport patients from Teaching / Provincial / Base Hospital to any other Hospital, on the journey back to the Institution.

There is a great reluctance of the Drivers to Transport Patients back from one Institution to another. All Drivers after handing over the patient should report to the respective officers dealing with transfers of patients at the institution concerned. (eg. Transport Officer or the inquiries desk.) at all times and take over patients awaiting transfer to the hospitals in its journey back.

A register should be maintained in the transport officers/ inquiries desk for all patients needing back referrals. In all wards books should be maintained to convey and confirm this information to the transport office with the signature of the transport officer / inquiries.

Hiring the Ambulance

1. The Ambulance may be hired by a private party to transport a patient on payment of the hire, with the approval of the Director or the medical superintendent of the institutions.

2. A stipulated fee per single kilometer should be charged for every journey.

3. Only one relative is permitted to accompany a patient in the Ambulance. Once the patient is admitted to Hospital even though the mileage for the return journey is also paid, no relative should be permitted to travel back in the Ambulance.

4. The Head of the Institution should also satisfy himself that the Institution could manage without an Ambulance for the period the Ambulance is away from the Institution on a private hire.

5. The head of the Institution should recover the hire in Cash before the vehicle leaves the Station and issue a receipt.

* In very special desperate circumstance when an ambulance is neither available in the institution nor possible to be called from another institution, or another

government department head of the institution may utilize a private vehicle on a hiring basis when no other alternative is available with an official acknowledgement from the receiving institution.

Communicable Diseases and Disinfection of Ambulances

The Medical Officer authorizing the transfer of a patient with communicable diseases should instruct the Ambulance Staff regarding their personal safety in handling the patient.

1. In disinfecting an Ambulance after transporting a case of infectious disease, the following should be complied with :-

   a. All linen used during transport of the patient should be steamed, or soaked in a bath of disinfectant for at least one hour, before it is given for laundering.

   b. All cushion covers should be removed and seats wiped with disinfectant solution, cleaned and sun - dried and fresh cushion covers put on before re-use.

2. The interior of the Ambulance should be sprayed with a disinfectant solution, cleaned and dried before re-use and this disinfection should be done under the personal supervision of a responsible officer, i. e., Medical Officer, Asst. Medical Practitioner or Public Health Inspector.

* Institutions where consultant services are available should not transfer patients to other institutions for specialized treatment without the consent of the consultant or the head of the institution. If this rule is not adhered to, the officer responsible is liable to be surcharged the cost of transport.

Institutions to which ambulances are attached should maintain a separate register of calls for the ambulance as per particulars given below, for examination of inspecting officers.

(a) Date of call and time and name of person summoning the vehicle :
(b) Name of Hospital Summoning the ambulance :
(c) Name of Patient :
(d) Address of patient transferred :
(e) Time the ambulance left the institution :
(f) Name and designation of employee escorting patient :
(g) Signature of officer who authorized the journey

(h) Name of Hospital to which the patient was admitted. (This should be noted by the admitting officer)

(i) Number of the Ward :

(j) B. H. T. Number :

(k) Time at which the ambulance left the institution to which the patient is transferred :

(l) Time of return to station :

(m) Driver's signature :

(n) Inspecting officer's signature :

Official Travelling :

Considerable savings could be effected in the travelling votes granted by coordination and integration of the services performed for which purpose comprehensive Procedures laid down by D. G. H. S. Should be implemented by heads of institutions.

1. When the travelling vote for the institutions is received at the beginning of the financial year the head of the institution should control the expenditure, as far as possible.

A senior staff officer should be assigned to survey the monthly expenditure and impose curbs on official travelling where necessary.

Maintenance of Log Books, files, DRC's etc.

The following records should be maintained at all the Institutions

1. Vehicle Log Book on Form General 267
2. Daily Running Chart on Form General 268
3. The vehicle Inventory indicating the Registration No.,
   data of registration make and model. Chassis No., Engine No. and details of all accessories.
4. Vehicle File.

These documents should be available for inspection at any time and information contained therein should be updated.

Vehicle Log Book

1. Log book maintained on Form General 267 should be in the personal custody of the officer - in - charge of the vehicle.

2. The necessary basic information related to the vehicle will be entered at the Head Office, before a vehicle is issued to an institution. However, if the necessary particulars have not been entered, the officer-in-charge must promptly contact the Head Office and get the relevant particulars, and enter same in the log book.

3. Officer - in - charge of a vehicle should see that all information as indicated below is recorded in the appropriate sections of the Log Book :-

a. Fuel consumption - with dates of verification authenticated by a Staff Officer.

b. Annual License No. should be recorded.

c. Tools of the vehicle should be recorded.

d. Replacement of battery giving make, number and date of replacement.

e. Replacement of tyres giving make, number and date of replacement and millimeter reading.

f. All major and minor repairs should be recorded.

g. Servicing - date and meter reading should be recorded.

h. Date of accident, place, name of driver, particulars of damage, cost of repairs, nature of action taken against the driver if any and reference to file number should be recorded.

i. Whenever a vehicle is released for temporary duty in another Institution, necessary entries should be made in the Log Book.

j. Loss of the Log book should be promptly reported to the DGHS/PDHS explaining the full circumstances under which the loss occurred. The PDHS/DGHS should examine the cause of the loss and take suitable action to prevent such losses in future. A duplicate should be obtained from head office.

Maintenance of the Drivers Running Chart (DRC)

Every Officer in charge must make sure that the DRC is maintained on a daily basis by the driver and all trips authorized by the officer in charge of the vehicle or a nominated officer by the head of the institution.

The staff Attached to an Ambulance

a. Ambulance Driver

b. Ambulance Cleaner, An Ordinary or Sanitary Labourer may be assigned these duties. There should be no objection in allowing one Labourer to continue to work in the Ambulance for a period of six months to one year

c. A Hospital Attendant or a trained Labourer should be detailed to accompany the patient. A female Attendant or a female Labourer should accompany a female patient.

d. Public Health midwife should always accompany maternity patients.

In Special instances a Medical Officer or a Nurse may be detailed with emergency life support and staff trained in Cardio Pulmonary Resuscitation. (Head of the Institution should ensure that all the staff attached to the ambulances are familiar with cardio - pulmonary resuscitation.)

Responsibilities of the Driver with Regard to Preventive maintenance of a vehicle.

In addition to the instructions provided in the daily running chart, the following should be complied by all Drivers :

a. Daily

1. Clean and Wash Vehicle.
2. Check water level in radiator and oil level in engine sump
3. Test brakes and lights.
4. Check tyre pressure, if possible, otherwise every occasion when fuel is taken.
5. Check steering
6. Start engine and listen for any unusual noises

Report to the Officer - in - charge all defects and see that they are put right at once. All defects must be recorded.

b. Weekly

1. Clean under carriage, engine, springs, transmission and steering with used engine oil. The equipment in the vehicle shall / must also be cleaned.

2. Check and top up the :-

   a. Sump

b. Gear Box

c. Differential

d. Steering box

e. Clutch and brake master cylinders.

f. Check, clean and tighten battery terminals. Top up battery cells to required level with distilled water.

g. Check for any rattles, loose bolts and nuts and unusual noises on the run.

h. Clean and oil all tools and check air pressure on all wheels including the spare wheel.

3. In the case of new vehicles the first service should be at 1000 kms and thereafter at 5,000 kms. The first three services should be carried out at the Workshops of Agents as some of these services are done free, and as per manufacturer's instructions.

4. Servicing at every 2000 to 3000 kms.

1. Complete high pressure lubrication service at the approved service station.

2. Drain and refill sump with the correct grade of oil as per Manufacturer's instructions.

3. Check battery electrolyte specific gravity.

4. Grease all greasing points and lubricate all points where grease should not be used.

5. Tighten all body bolts and nuts.

6. Get oil filter and air cleaner elements cleaned.

7. Rotate the wheels as follows :- left front wheel to right rear wheel, right rear wheel to left rear wheel, left rear wheel to right front wheel, and right front wheel to go as spare wheel.

5. At Every 10,000 kms.

1. Drain and refill gear box and differential with new oil of correct grade.

2. Air Cleaner - remove, clean and wet with fresh oil if oil bath type. otherwise clean element with pressurized air.

Vehicle identity Card

Every departmental vehicle will be issued a Vehicle Identity Card by the Head Office. This should be kept in the custody of the driver and produced whenever necessary at fuel station or to an inspecting officer.

Accidents of vehicles

Prompt action must be taken to inform the police station of the area of accident and the officer in charge of the vehicle in the case of a accident.

Repairs to vehicles.

Prompt action should be taken to effect repairs of vehicle in Registered Garages. The Head of the Institution should Register relevant garages at the beginning of each year.

Head of the Institution should call a minimum of three quotations from Registered garages including the agent of the vehicle if possible before effecting a repair. The Head of a provincial hospital is empowered to authorize repairs up to Rs. 15,000/-.

If the repair is costing more than this amount the quotations should be submitted to the relevant PDHS of DGHS for his approval.

In a very special circumstance which is very urgent a minor repair could be under-taken with the Petty Cash. This should not exceed a maximum of Rs. 250 in Colombo and Rs. 500 in outstations at a given time without calling for quotations. All removed parts should be handed over to the transport clerk.

Cost effective use of Vehicles.

Head of the Institution should keep the expenditure in respect of the vehicles within the annual allocations for cost of fuel, running cost maintenance granted by the PDHS/ DGHS. In carrying this out the following points should be taken in to account.

1. Fuel Consumption tests should be carried out on all the vehicles and the kilometers per litrer recorded in the D. R. C. and the respective Log Book.

2. If a Milo meter of a vehicle gets out of order, it should be repaired or replaced, as early as possible. Until such time this is done, the driver should be ordered to enter the mileage in the D. R. C. by reference to previous records or milestones or based on milo-meters of other vehicles covering the same distance. Suitable entries should be made in the D. R. C. and the Log Book and the Head of the Institution should verify whether the driver conforms to the above requirements.

3. Fuel orders should be issued only by the Head of the Institution or Administrative officer or other officer of staff rank. They should see that the monthly quota of fuel allowed for the vehicles is not exceeded.

4. Heads of Institutions should make arrangements to obtain fuel for vehicles from the nearest Petrol Shed.

5. The purpose of the journey should be stated in the D. R. C. by the officer using the vehicles, as for example, cashing salary cheques at Bank of Ceylon..... It is not enough merely to state "Official". The officer should sign the D. R. C. using his full signature and state his designation, milo - meter reading full at the commencement and end of each trip should be correctly entered either by the driver or the officer using the vehicle.

6. Fuel orders issued to vehicles and D. R. C. of Medical Institutions should be checked by a responsible officer in the institution and also by an Officer of Staff rank recommended by the PDHS/DGHS in the respective offices after submission with a view to ensure that the vehicles have been used sparingly for legitimate journeys.

7. Unit cost per kilo meter run should be prepared for each vehicle considering all the inputs for emoluments of staff, fuel and maintenance by the Head of the Institution and submitted to the PDHS/DGHS before the 5th of each month.